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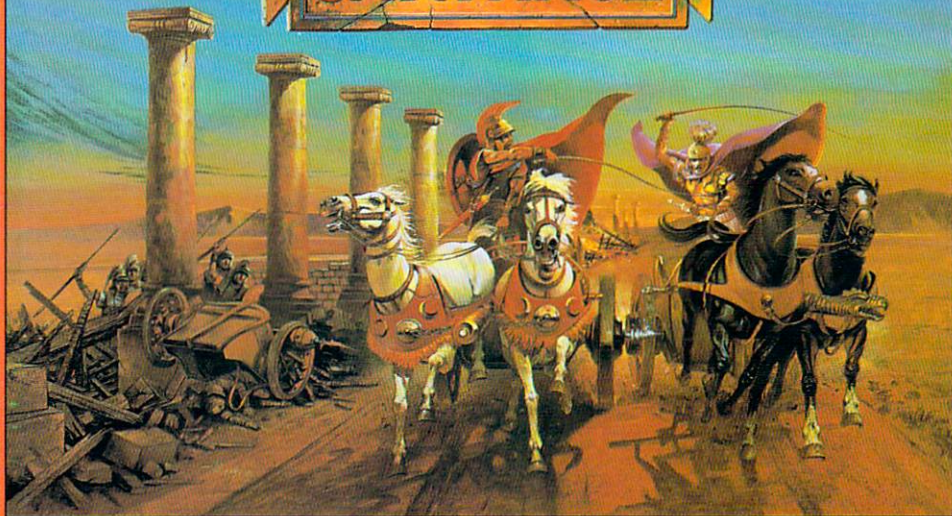
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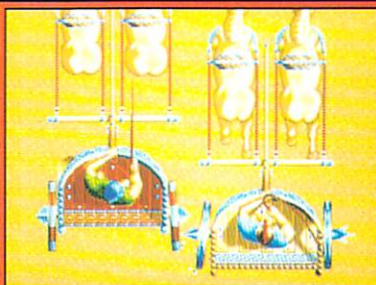
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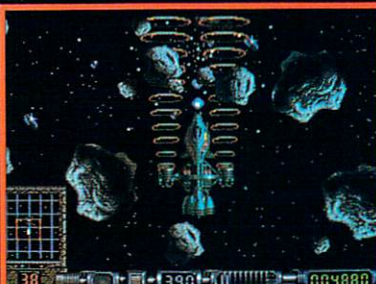
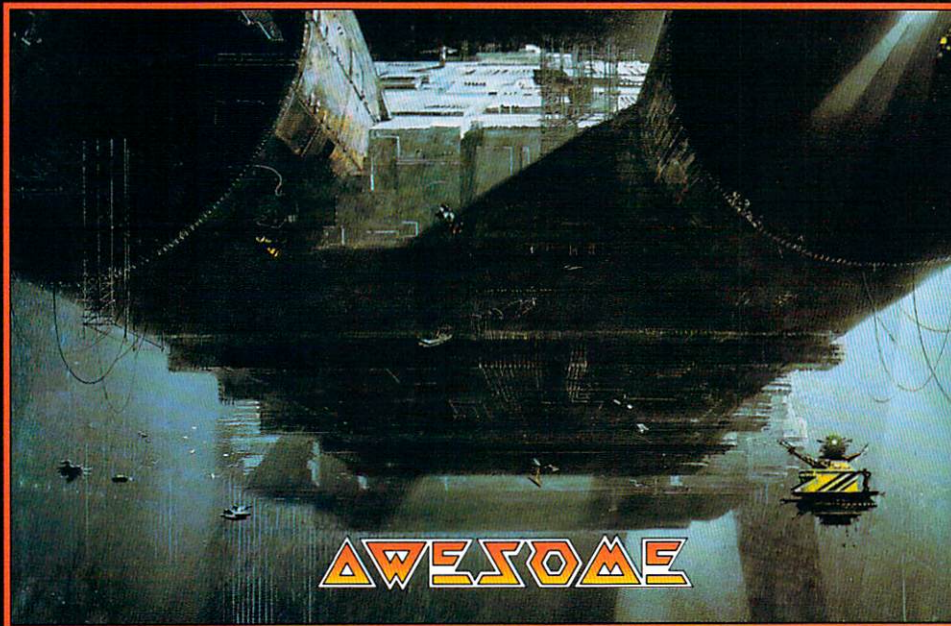
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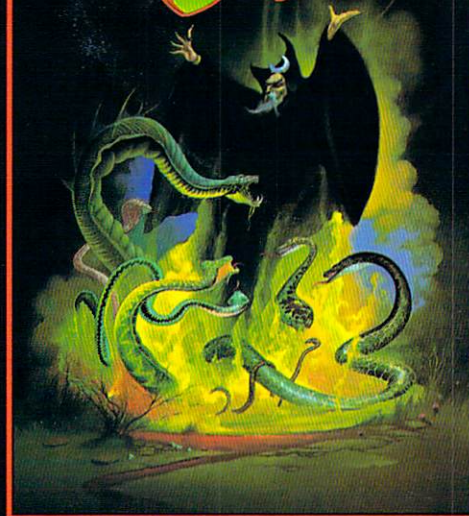
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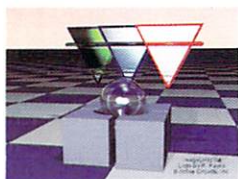
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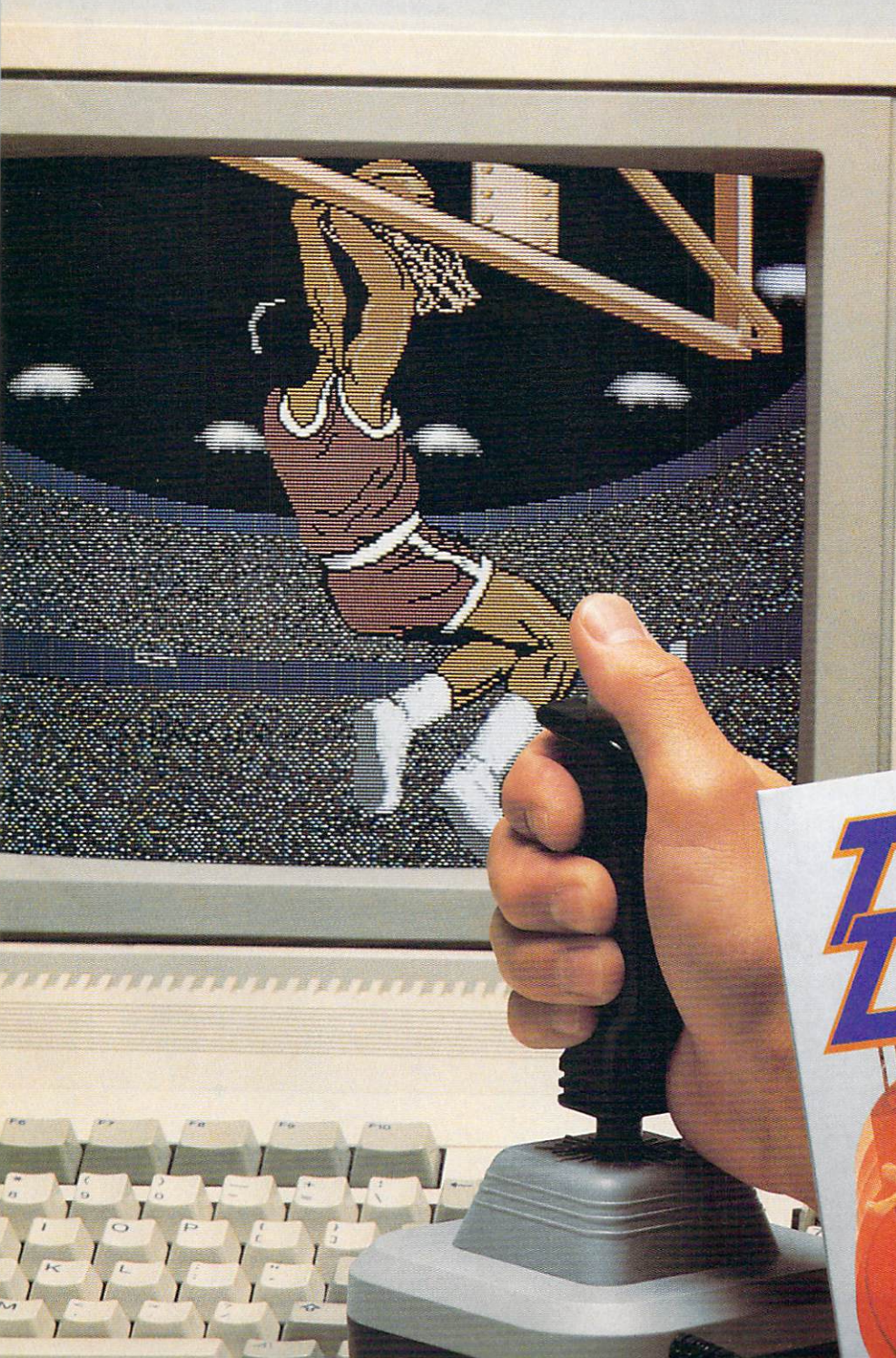
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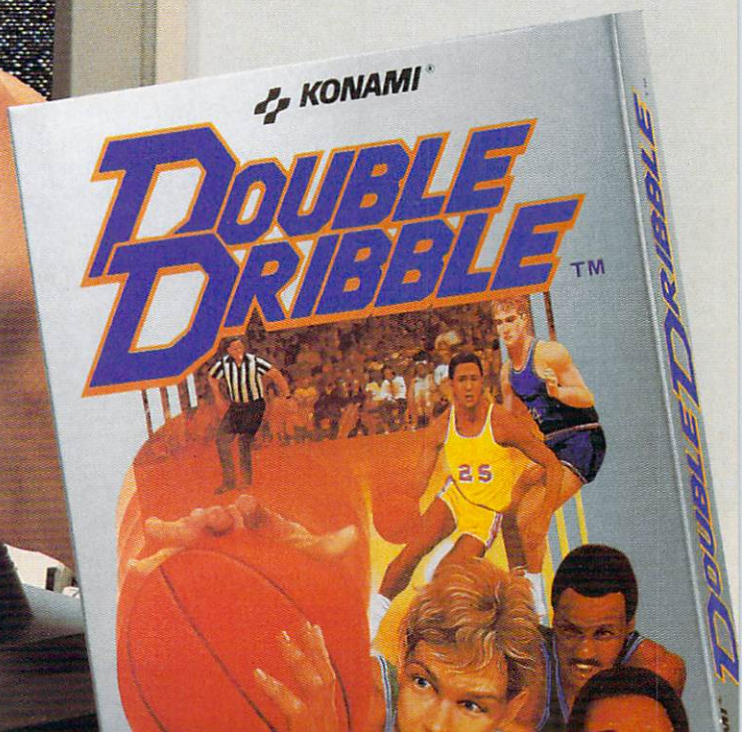
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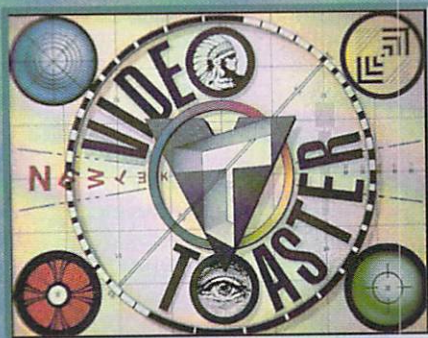
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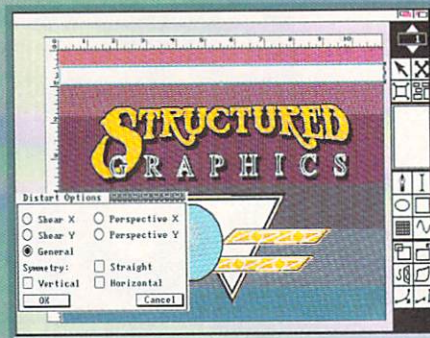
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the AMIGA PRO

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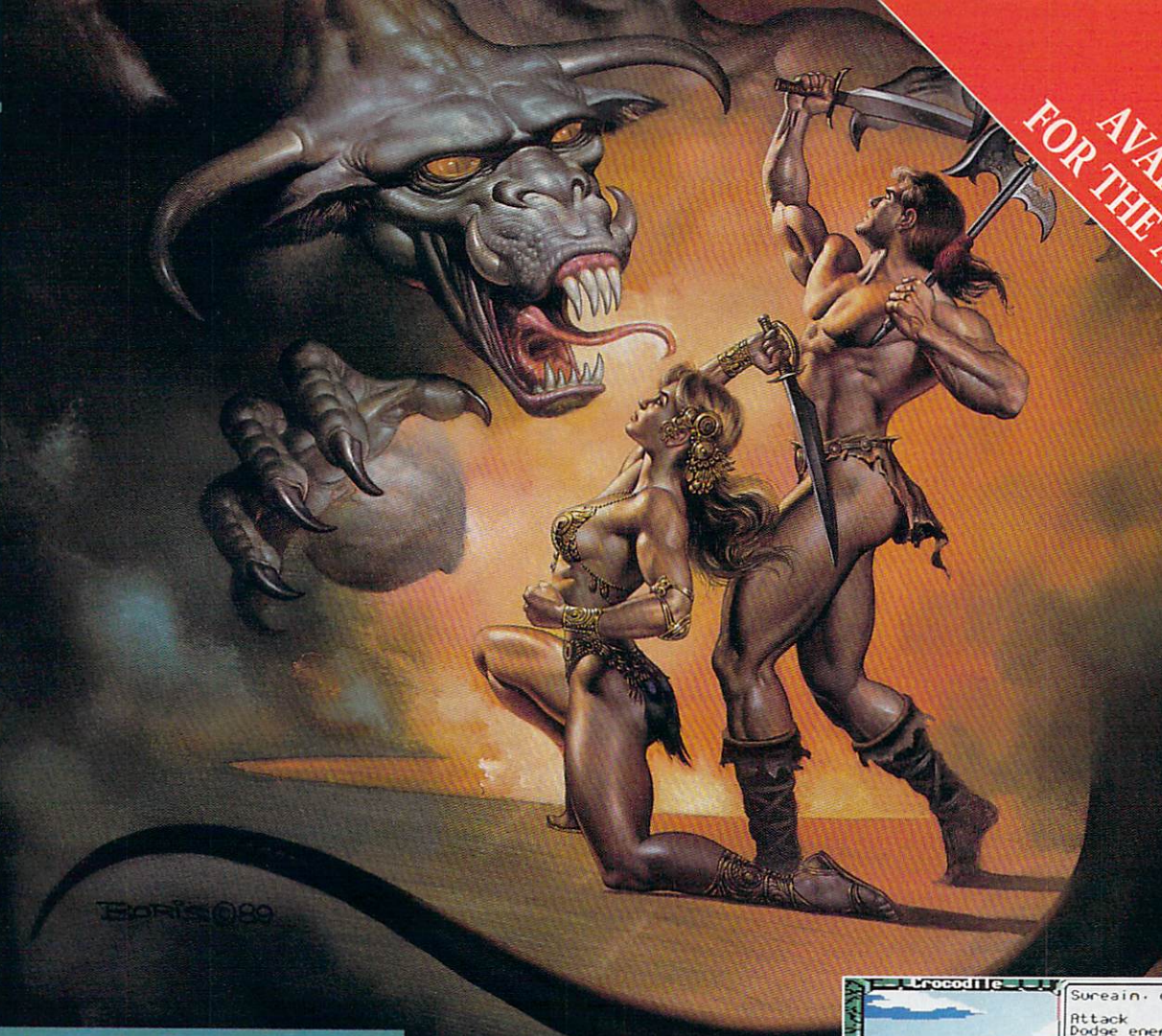


Cover Illustration by Benn

.info strives to be a clear voice for Amiga users and a showcase for the talented people and exceptional products of the Amiga computer community. Everything in this magazine (except for some of the ads) is digitally created, edited, and color separated as complete pages on Amigas running off-the-shelf software and peripherals, and output directly to film.

The 1st magazine produced entirely with personal computers.

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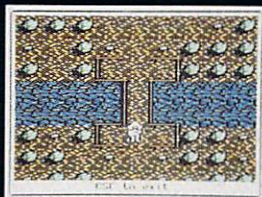
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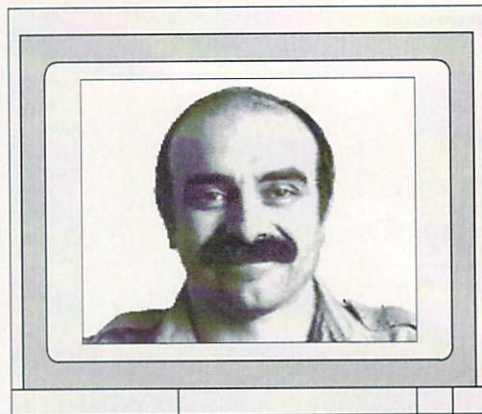
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.info monitor

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CHANGING COURSE

You can just barely feel it. There's a small shift in the direction of the wind. The Amiga is changing course. (Or maybe it's just that one is finally being plotted...) The harbinger of this shift is the imminent release of NewTek's *Video Toaster*.

The folks at NewTek have made a great deal of noise about the *Toaster's* influence on the Amiga market. At times, they've gone so far as to imply that once the *Toaster* is out, there may no longer even be an Amiga market. It will be replaced by a *Toaster* market. The Amiga will simply be one of the things you have to buy to make the *Toaster* work. As arrogant as this sounds at first, they may be right.

The Macintosh sat on the shelf and gathered dust until the advent of Desktop Publishing (with capital letters); then it took off like a shot. By and large, it has remained a Desktop Publishing machine. Correction: it has remained *the* Desktop Publishing machine. But despite Apple's best efforts, it has never really become a contender in the business market. This is not to say that you don't find offices running only Macs, doing their wordprocessing with *Word* and their spreadsheets on *Excel*, but by and large those tasks are still done by most businesses on IBM/PCs or the clones thereof.

Like Apple, Commodore spent a good deal of time, money, and effort trying to convince people that the Amiga was a wonderful general-purpose home and business machine. This makes sense in a way; those of us who are familiar with the Amiga know

that it *is* a wonderful all-around computer. 16-bit technology, wonderful graphics, co-processors, economical multitasking - all are things that the rest of the industry is just now getting around to. But the fact that the Amiga *is* good for everything doesn't mean that you will be able to sell it to people on that basis. Most of them already have a heavy investment in MS/DOS machines. It would require swallowing some pride (and spending no small amount of cash money) to revamp at this point. No, like Apple, Commodore needed a niche into which the Amiga could be sold. That niche turns out to be one created by Apple and IBM themselves: Multimedia (and along with it, "Desktop Video"). Fortunately for Commodore, the competition has defined a multi-billion-dollar market that is perfect for the Amiga.

Surprisingly - especially considering their past blunders - this fact has not escaped Commodore. They are pursuing this market with all the resources at their disposal. Unfortunately, compared to IBM and Apple that isn't much. The success of the Amiga in the multimedia-slash-desktop video market will depend greatly on word of mouth and magazine coverage.

Enter the *Video Toaster*. It has generated a *lot* of interest in the video community. At the NAB and SIGGRAPH shows this year, it drew media and crowd attention before the doors were even open. The *Toaster* is getting write-ups in all the major video magazines. People are excited about its capabilities and its unheard-of price. The *Toaster* is promising to do the video production work of machines and software costing tens of thousands of dollars more. And *that* gets people's attention!

Video is a niche market just like Desktop Publishing. DTP has sold a lot of Macs for Apple, and video can sell a great many Amigas for Commodore. Lots of people will buy *Toasters*. Lots more will buy Amigas without *Toasters* because the perception will be that it is the "in" video machine. They will find out about native Amiga graphics, inexpensive digitizers, genlocks, and titling programs. Some will even discover wordprocessing and spreadsheets. The *Toaster* connection will sell a lot of Amiga. And it will change the Amiga market.

Just as some people still buy the Mac for reasons other than desktop publishing (they *do*, don't they?) some will still buy the Amiga for reasons other than video. Multitasking will impress some. Price/performance will sell it to the quality-conscious. Some may even buy it for the quantity of excellent PD software, or for scientific number-crunching, or for MIDI music. Joystick jockeys will still want an Amiga because it's the best game-playing computer money can buy. But the 'sales pie chart' will be heavily skewed towards video users. And that's okay. Those other applications won't just disappear because video is top banana. In fact, with a larger installed base they'll probably prosper. The more Amigas there are in the world, the better off everyone associated with it will be.

The Amiga has found its niche. It's not a totally new direction for the Amiga - video has always been an important Amiga market. But as the market builds, it may (finally!) mean prosperity for Commodore, and for the companies that have hitched their wagons to the Commodore star.

- Mark & Benn

**All photographs are of
actual DCTV screens.**



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Thanks.

For the last several months I have dismissed the scarcity of Amiga mentions by the *New York Times* computer columns and *InfoWorld* as a mere irritant. Recently, this neglect has become blatant and suggests a cold shouldering of the Amiga bordering on contempt. Either most computer journalists are woefully ignorant of the Amiga's capabilities, which would bring into question their professional thoroughness and general knowledge, or out of personal bias they are willfully ignoring these machines, which would negate their journalistic objectivity. I hope the periodicals and newspapers concerned will be more even-handed in regards to the Amiga in the future.

- James W. Greenridge (Jamaica, NY)

So do we, but rather than evangelizing to the already-converted and commiserating with each other that Commodore 'don't get no respect,' you, we, and every other Amiga lover needs to do a little friendly drum beating. Most of the problem is probably just plain ignorance. Commodore is working (not as fast as some of us would like, but working nonetheless) to dispel the illusion that the Amiga is merely a game

machine. Fill out survey cards that ask what system you have and tell them all the amazing things you do with it. Write magazines and newspapers telling them of your interests or chastising them when they screw up. Show your Amiga off to all your friends. Commodore is putting more effort into marketing, advertising, and getting the Amiga into more retail outlets and into more schools. With all this we'll take a big step toward greater acceptance by the rest of the computer world.

- Mark & Benn

Finally, someone bold enough to speak out about the inferiority of Sierra's games for the Amiga. Hooray for Tom Malcom! I reluctantly bowed to hype and bought *Hero's Quest*. Upon booting the game, I was bewildered. Did I miss some special screen to adjust the graphics? No, I reminded myself, this wasn't an IBM I was playing with. I must admit, I was disappointed. Sure the game design is good, but I don't think Amiga owners will be too patient with Sierra until they begin to show their commitment to the Amiga in terms of execution - not just number of games being converted. I greatly respect what Sierra has done for the computer gaming industry, but it's about time someone told them about the Amiga's graphic and sound capabilities. It's a tired complaint, but Sierra's commitment to Amiga is going to have to move forward to match the commitment Amiga machines have to great sound and graphics. I'll be waiting with my wallet ready, Sierra.

- Stephen Parolini (PeopleLink)

This is the last chorus of Sierra-bashing, we promise. We wouldn't complain so loudly if we didn't basically like their game designs so much. Maybe, just maybe, we'll get Sierra's attention and they'll do something to really Amiga-tize their games. If they do, watch out. There'll be no stopping them.

- Mark & Benn

If my computer burned up tomorrow, I'd still subscribe to your magazine. The humanity and humor

found in it are in short supply in the rest of the computer field, and I find refreshing integrity and useful information in every issue of .info.

- Kendall Anderson (Turtle Lake, WI)

We aim to please. Write, or EMail, us and tell us what you think about our new "look & feel", and what you'd like to see in future issues. We listen.

- Mark & Benn

I read with great interest your interview with Laurence Gartel (see interview, .info #32), but found the work presented to be representative of all that is bad in what is called "Computer Art." For the good of the medium both .info and Mr. Gartel should refrain from use of such poorly produced images. Computer art is and should be, as any art, an endeavor which requires the study of classical techniques and mastery over one's media. Computer Art should combine classical technique and what unique qualities the media offers, such as digitization, raytracing, and mathematical visualization, to offer what is new and exciting in imagery. Computer Art has long suffered from the availability of these technologies in the hands of non-artists, producing for the most part digital diarrhea. The proliferation of poor imagery that has gained acceptance to such a degree that computer art has no meaning, no direction and has fallen into a void which the "classical" art world and the public cannot place.

- Louis Markoya

As to what is art, we'll leave that up to the philosophers, but we're firm believers that art, like beauty, is in the eye of the beholder. Only the passing of time will determine what will survive as classic and what will disappear as drek, not the critics. That methods for the creation of "Computer Art" are now easily available to the masses of unstudied, non-classical, non-artists would seem to encourage innovation, experimentation, and communication, in and of itself.

- Mark & Benn



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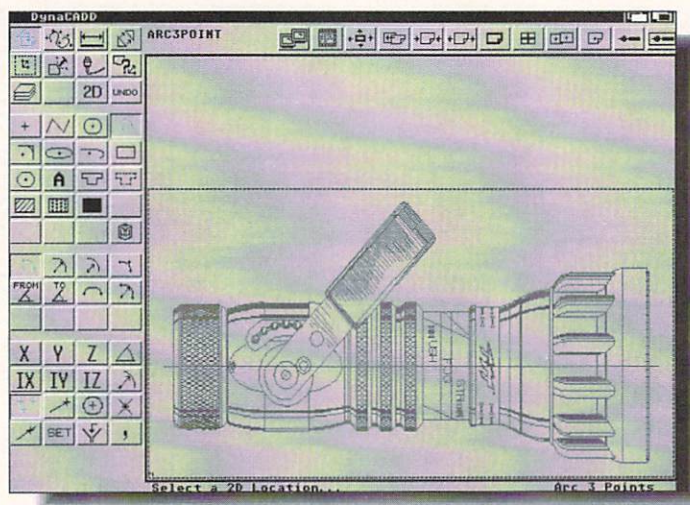
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Work screen showing some of the menu icons from Ditek's DynaCADD



DYNAMITE CAD

Our continuing quest for the ultimate in CAD packages has led us to Ditek and **DynaCADD**, a good-looking 2- and 3D computer-aided drafting package for the Amiga. The package has been out for some time on the Atari ST and that version has been getting some rave reviews and favorable comparisons with high-end workstation drafting programs. It's the 3D aspect of **DynaCADD** that really sets it apart from the herd. The thing can show up to four views of your wireframe drawing at once and uses what Ditek calls Geometric Coordinate Planes (GCP) for determining what you see and where you see it. The kicker is that any work you do in one view is automatically updated in all the windows. Of course, you can also rotate, scale, zoom, scroll, and even change the GPC itself if it serves your purpose.

As for the functions you need to create your drawings, there seems to be no end of them, from sectioning and cross-hatching to user-definable grid and axis to automatic dimensioning. The basic entities are also present in all the popular flavors: points, lines, circles, arcs, ellipses, elliptical arcs, b-splines, bezier curves, solids, and even such multiple entities as boxes, polygons, polyfigures, subfigures, and sectioning. All of these can be either 2D or 3D and those in 3D can be transformed to 2D. The fonts *Dy-*

naCADD uses for text are all AGFA/Compugraphic outline fonts (wait until Megan hears about this!) and an editor is included to make changes to them or make new fonts entirely. Hard-copy and file formats are also available in abundant variety. Basically, if it's a plotter or printer, *DynaCADD* supports it (Epson, HP, PostScript, and the like); if it's a standard PC or Atari file, *DynaCADD* supports it (DXF both read and write, and write only for HPGL, DMPL, GEM IMG & META, Xerox Ventura IMG, PostScript both plain and Encapsulated, to name a few).

Look for the Amiga incarnation of *DynaCADD* to send some strong ripples through the CAD community. It's on the pricy side at \$995 US (\$1295 CN), but they say you get what you pay for. Ditek International/ISD Marketing, 2651 John St., Unit #3, Markham, ON Canada L3R 2W5. 416-479-1880.

MONDO VIDEO

Now why hasn't anyone thought of this before? A company in North Dakota is shipping a little box that plugs into your Amiga's parallel port and acts as a remote control for a video deck (or, for that matter, any electronic device controlled by IR remote). The **IR Remote Controller** comes with two software programs: BGSEARCH will hunt for a specified video segment, switch the monitor

to video mode (if your monitor supports it), and play the segment; TIMEIT will perform timed remote operations (for example, fast forward for 30 seconds, Play for 15, and then Stop). What it all comes down to is an inexpensive way to get much the same effect as using a laserdisk. Cost is \$199.95 from *Edu-Vid Research*, PO Box 149, Pembina, ND 58271. 204-668-2062.

PUTTING IT TOGETHER & TAKING IT APART

The Puzzle Factory is releasing more programmers' tools from the Australian company DigiSoft. **ReSource'030** is a very fast disassembler written entirely in 68030 assembler code. It features over 700 menu functions (a world's record, we think!) and will take apart executable files, binary code, memory, or disk blocks. **Macro68**, on the other hand, will put assembly code together for you. It's a multi-pass assembler that uses the new Motorola syntax (it also comes with a utility to convert old-style syntax source code) and has extensive macro capability. It has ARexx support, cross-reference listing control, a structure offset directive, and a unique shared-library which permits use of pre-fab, resident include files (header files, standard Amiga files, or what-have-you). The Puzzle Factory, PO Box 986, Veneta, OR 97486. 503-935-3709.

CLONE CONNECTION

Let's say you want an IBM-style hard drive for your Amiga, but you don't want to invest in a Bridgeboard. You might want to look at the **MAX-125 Autoboot Adapter Board** from *Palomax*. It directly operates many 8- and 16-bit hard disk controllers (XT, AT, ST506/412, and ESDI) and virtually all PC hard drives. Each board can be configured to support up to four controller boards for a total of up to eight hard drives. Some assembly and soldering is required. Prices start at \$149.95. 424 Moreboro Rd., Hatboro, PA 19040. 215-672-6815.

FUTURE CLASSICS COLLECTION



Quotes from a few of our buyers ...

"These games are great! Please make a sequel."

"Excellent graphics! Keep up the good work!"

"Nice game—a classic!"

"An excellent collection!"

"I own most games on the market and this is truly the best package available! Keep it up!"

"The game is great ..."

"I'm very impressed with the options of play as well as the graphics ..."

"Excellent head-to-head competition."

"Good games—do you have others?"

"Future Classics is fun!"

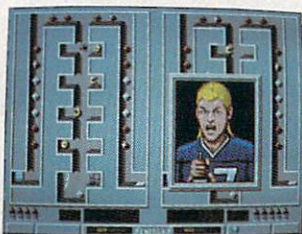
"My two children LOVE the games!"

"One of the best games yet. Looking for Vol. 2."

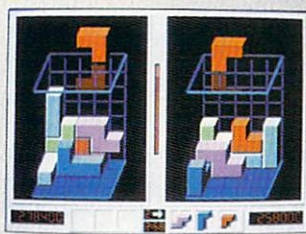
"I thoroughly enjoyed these games."

"How about Future Classics Collection Vol. 2! I LOVED all the options and the games."

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NEW PRODUCTS



The main gadget screen from Mindware's 3D Text Animator

CREDIT WHERE DUE

Mindware International is shipping **Credit Text Scroller 2.0** (\$49.95). All you have to do is feed text into it, click on a few buttons, and it will generate a smooth-scrolling ANIM. It will automatically add color and dropshadows to standard fonts (it also supports color-fonts) to dress up your work a little. ARexx is supported, and the package is part of Mindware's T.A.S.S. system. Also new from Mindware is **3D Text Animator**, the third volume in their Video Solutions series. This one will take a text string and render a 3D animated version of it in standard ANIM format. It's designed for ease of use and retails for \$49.95. 110 Dunlop Street West, Box 22158, Barrie, ON Canada L4M 5R3. 705-737-5998.

A COMPANY DOING AMIGA

ACDA is known for hardware data acquisition products and controllers and there are some recent additions to their product line. The **DataStation** is a board with 16 12-bit analog to digital channels, 2 D/A channels, 32 digital in/outs, and 3 independent counter-timer channels. It also has a stable instrumentation amplifier with programmable gain. Cost is from \$475 to \$1450, depending on the configuration. **DigiScope Plus** is a digital oscilloscope emulator with such fifty-

sounding functions as a Fourier Spectrum Analyzer, Digital Function Generator, Digital/Analog/GPIB Data Acquisition, and a Full Multifunction Triggering section. Price is \$159.95, with a filtered version going for \$179.95. The company is also shipping a Laserdisk Controller Software Library (\$99.95), which is a linkable library of C routines (Manx & Lattice compatible) for controlling a Pioneer LD-V2200 laserdisk player. 220 Belle Meade Ave., Setauket, NY 11733. 516-689-7722.

DEEJAY

DJHelper doesn't have anything to do with making a one-dish meal out of a disc jockey (I hear they're a little stringy anyway), but it can help you get the best out of your HP Deskjet printer. It's a greatly enhanced driver and utility that provides easy control over all aspects of the printer, from graphics (the samples we've seen are impressive) to font selection. Price is \$50.00. **Creative Focus**, PO Box 580, Chenango Bridge, NY 13745. 607-648-4082.

C. ITOH NEWS

We had been wondering what was going on with printer manufacturer C. Itoh, and just found out that they have reorganized and renamed themselves

as **C-Tech**. The company has brought out six new dot-matrix printers, including the **C-645** 28-pin (!) flatbed high-volume, high-speed printer with a 32k buffer (\$1395), the **C-510** 24-pin (\$639) that also comes in a wide-carriage model (**C-515**, \$749), and narrow- (**C-240**, \$449) and wide-carriage (**C-245**, \$559) versions of a low-end 9-pin printer. We've used C. Itoh printers around the .info offices for years and have found them to be very reliable. 2515 McCabe Way, Irvine, CA 92714. 714-833-1165.

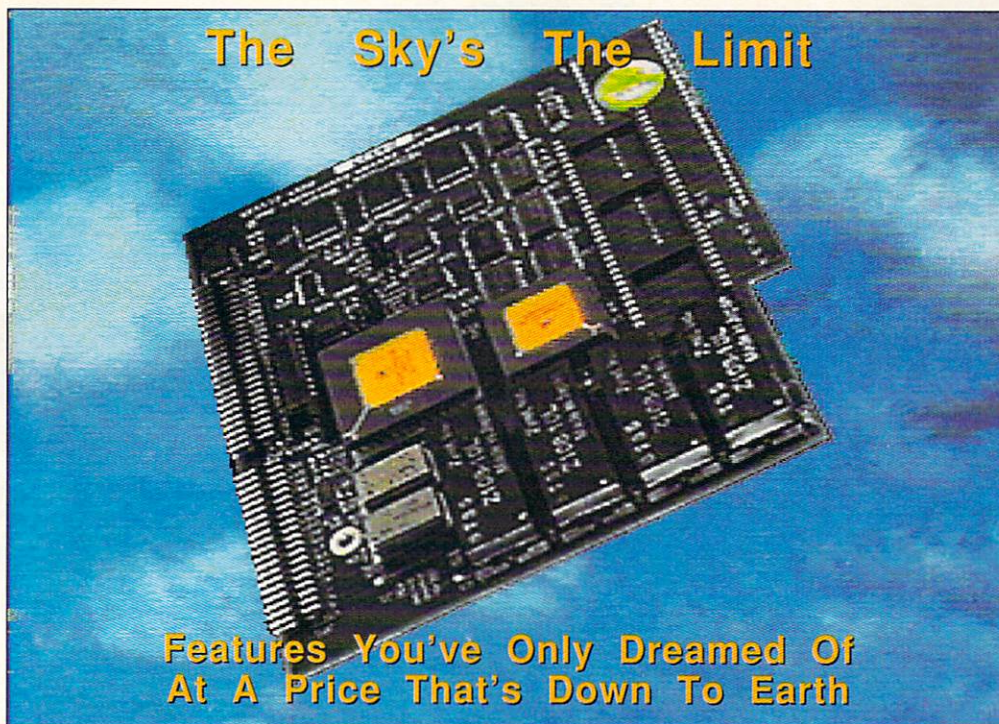
KEYBOARDING

One of the weirdnesses of the Amiga, and the A1000 in particular, is its non-industry-standard keyboard. A company called **Ricketts, Inc.** has come out with the **XT1000** keyboard converter (\$49.95) that will let you plug in any IBM-type AT or XT keyboard. Finally! A way to have a usable keypad on the A1000. They are also making a **2000/1000 Cable** (\$14.95) that will let you plug alternative keyboards into the A2000. The same company also has some of the defunct C Ltd.'s products. 8611 E. 63rd Street South, Derby, KS 67037. 316-522-9204.

XP DRIVE

The latest of **Supra's** hardware projects is the **SupraDrive 500XP**, a tiny little box that plugs into the left side of your A500 and gives you not only a hard drive, but memory expansion as well. The device starts out with a 20 Mb hard drive and .5Mb of RAM for a price of \$679, with other configurations available. The drives are autobooting, pre-formatted, and very flexible. There are external switches that can be changed to your needs: enable/disable autobooting, change SCSI number, disable the RAM, or even disable the hard drive itself. (I suppose the ultimate in conspicuous consumption would be to hook the thing up and then disable everything.) The units also come with utility software. 1133 Commercial Way, Albany, OR 97321. 503-967-9075.





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NEWS & VIEWS

50MB DRIVE FOR A3000

In recognition of the need for increased storage capabilities for such sophisticated applications as graphics, animation, and video, Commodore recently announced that they have begun shipping upgraded 50MB hard drives with the new Amiga 3000 in place of the 40MB versions. This 25% increase in storage capacity does not affect list prices.

NEW GENIE POSTSCRIPT RT

Genie is now offering a PostScript RoundTable for anyone interested in the PostScript language. The Bulletin Board offers areas devoted to programming in PostScript, desktop publishing, Book-On-Demand Publishing, printers, fonts, and PostScript products. Because of PostScript's device independence, all major computers, printers, and phototypesetters are supported. The PostScript RT software libraries contain extensive files on fonts, utilities, tools, demos, and other PostScript related topics, as well as tutorials ranging from beginner through advanced. For more information about signing up for GENIE online service call 800-638-9636.

IBM VIDEOTAPE GIVEAWAY

IBM is currently conducting an advertising campaign hyping Multimedia on the PS/2. To see how PS/2 Multimedia compares (or doesn't compare) to the Amiga, call 800-255-0426 for a free demonstration video cassette. At least you'll get a free tape.

DIGITAL DESPERADOS

Law enforcement officials have been cracking down especially hard on illegal hacker activities over the past year, sometimes with alarming severity and with far-reaching consequences. Federal agents raided Steve Jackson Games, an Austin, TX, company, in March of this year with an unsigned search warrant and seized

computer equipment, hard drives, floppies, and all copies of a forthcoming book, GURPS Cyberbunk, because they suspected that the cyberpunk book could be used as a manual for computer crime. Law enforcement officials eventually returned the equipment, but not the manuscripts, to Steve Jackson Games after a three month delay. No charges were filed and the company's losses were estimated at \$125,000.

Other hacker crackdowns:

February - Members of the hacker group Legion of Doom are arrested and charged with breaking into BellSouth computers, suspected of causing a day of nation-wide long distance dialing problems for Bell; Craig Neidorf, publisher of an electronic newsletter for hackers, is arrested for disseminating a memo downloaded by another hacker from a BellSouth computer.

March - Federal Agents search Steve Jackson Games. They also search the

residences of two hackers in Austin. May - Federal Agents raid hackers in fourteen cities during a three-day sweep called Operation Sun Devil. Confiscated were more than 40 systems and over 20,000 disks. Apparently names targeted for Operation Sun Devil were taken from EMail addresses that appeared in hackers' computers. The implications for law-abiding computer users is quite alarming. Can you be sure you've never sent to or received any EMail from a suspected hacker?

At issue in some of these cases - certainly in the Steve Jackson Games case - is the extent of First Amendment protection for computer-mediated speech and the protection of individuals, even those who use computers, from unreasonable search and seizure or from deprivation of their property without due process. It's a complex issue, but certainly computer users should be

.info UPDATE

SPECIAL DEALS

✓ **VidTech** is offering an extended warranty for their *ScanLock* external genlock. One year of full coverage on parts and labor, with all work guaranteed to be completed in four days or less, will cost you \$95. 2822 NW 79th Ave., Miami, FL 33122. 305-477-2228.

MOVES

✓ **Micro R&D**, makers of replacement power supplies and other hardware, has moved to 137 N. 7th St., PO Box, 130, Loup City, NE 68853. 308-745-1243.

VERSIONS

✓ **Virtual Reality's** *Vista* is about to go into version 2.0 and is considerably different from 1.0, sporting a revised interface, several screen resolutions, and a new Gouraud shading method that produces unbelievably beautiful fractal landscapes. 2341 Ganador Court, San Luis Obispo, CA 93401. 805-545-8515.

✓ **New Horizons** is shipping version 3.1 of *ProWrite*, their graphic wordprocessor. The most notable addition is a reworking of the file and font requesters. They now, among other enhancements, have a toggle to show not only *ProWrite* files, but also all files. New Horizons has also added a 'speak' option, making *ProWrite* a good choice for the visually-impaired. PO Box 43167, Austin, TX 78745. 512-328-6650.

✓ **Nag**, the obnoxiously useful appointment reminder from **Gramma Software**, is at version 3.2a. Among other things, it now can import events from Gramma's *CAL* calendar maker. 17730 15th Ave. NE, Seattle, WA 98155. 206-363-6417.

MAJOR OOPS

✓ A typo on the subscription card in the September *.info* (#32) somehow slipped past all of our beady (but sharp) little eyes. A 3-year subscription is really 33 issues, not 38. We regret the error.

HARPOON

The best wargame simulation in the world...just got better.

In the few short months since it hit the streets, Harpoon has become the number one, best selling wargame simulation in America. And no wonder.

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Keith Ferrel, Compute

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M. Evena-Brooks, Computer Gaming World

"Harpoon is the definitive simulation of modern warfare at sea".

Richard Sheffield, Game Players

And now with the release of new, and even more challenging Battlesets, as well as the extraordinary *Scenario Editor*, you not only have more ways to test your skills, you can even customize the way you play the game.

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NEWS & VIEWS

afforded the same rights and protections as other citizens in similar circumstances. Stay tuned.

VIRTUAL REALITY NOW IS

My favorite part of *Star Trek: The Next Generation* has always been the Holodeck. Computer generated reality - to be anywhere you've ever imagined, doing anything you've ever wished - what a heady concept! That concept is now actuality with the opening in August of a 4000 square foot mega-arcade in Chicago, IL. At Battletech Center, not far from Chicago's Loop, unearthly dreams and surreal scenes are synthesized into concrete reality in an interactive video game that pits teams of players against each other in what is the next closest thing to cyberspace. Two teams of four

players are sealed into light-tight cockpits that obliterate the outside world. These capsules are the nerve center of a huge 'BattleMech' robot (ala Info-com's computer game). A video monitor is the player's window on the extraterrestrial landscape and the other similarly equipped players. Microphones let players communicate with each other as they square off in a battle to the simulated-death. Cost per half hour of play time is \$6-\$8 depending on the time of day, and the average game lasts about two hours. Custom boards, PCs and Amiga 500s are used to generate the effects.

3D LASER DISPLAY

Texas Instruments recently unveiled their groundbreaking Omniview 3D laser display at Siggraph '90. It

goes an evolutionary step beyond the TI laser 3D display technology shown in INFO #24. TI calls the Omniview technology "a real-time, auto-stereoscopic, multiplanar 3D display system." Those treated to the first demo witnessed a wireframe jet circling above a contour map inside a glass bubble two feet in diameter. The display surface consists of a translucent double-helix disc mounted on a motor shaft. The rotating disk fills the display volume within the glass bubble. A modulated laser beam scans in the x and y dimensions and synchronizes them with the rotating disk to provide the z dimension. A Sun 370 was used for preprocess along with a VME-bus card for display control. A spokesman for TI stated that their "goal is to provide generic 3D display technology for any platform and application."

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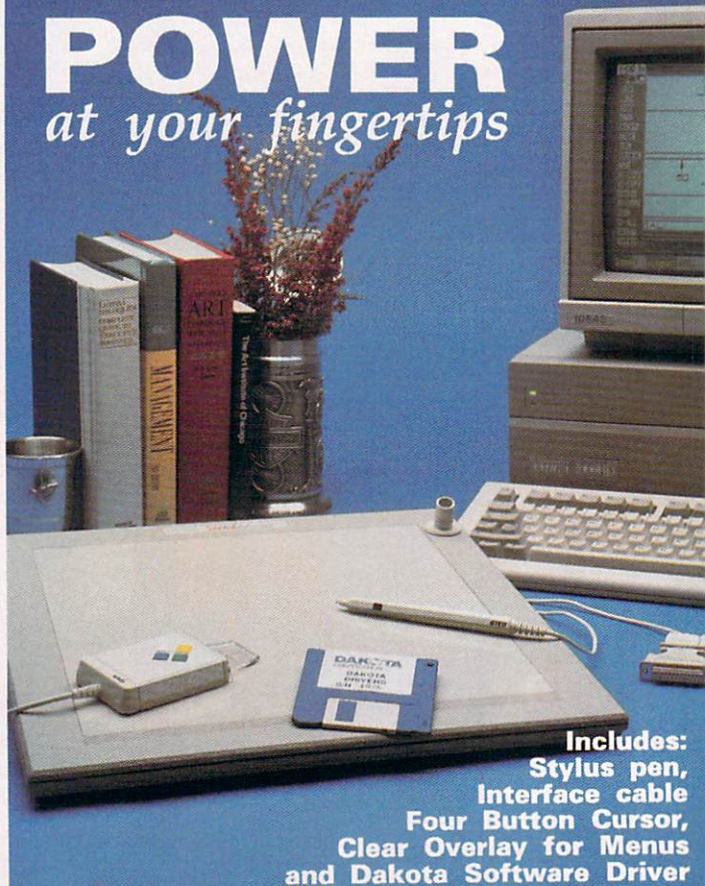
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NEWS & VIEWS

RUMOR MILL

DISCLAIMER: The following are among the most entertaining rumors we've heard the past couple of months. They are presented for your entertainment and amusement only. Please do not make any important decisions based on these rumors, as some will prove to be inaccurate or just plain false.

> We've heard some Unix news out of Commodore for the first time in a long time. It seems that they've demoed Unix-based A3000 systems for NASA in Houston, they've sent some to Motorola for evaluation, and Virginia Tech has reportedly decided to purchase a bunch of Amiga Unix systems. From what we have been

able to glean from those on the periphery of things, it looks like AMIX (which is what Commodore's Unix is called) will ship installed on an A3000 with at least a 100 meg hard drive. Big commercial accounts in government, education, and commerce will apparently get the first shot at AMIX systems, with consumers (and upgraders) last in line. We'll take a Sneak Peek at Commodore's Unix system in the next .info.

> Commodore stock hit an 8-year low in August, selling at 4 1/2 a share. CBM stock had started the year at 7 3/4 and has been on a slow slide ever since. The cause? CBM reported a 10¢ a share loss for the quarter ending in June, and projected another loss for the September quarter. While

the Christmas quarter is expected to show a profit, the first quarter of calendar 1991 is projected to show a loss as well. Needless to say, it's difficult to find a broker who remains bullish on Commodore stock.

> Harry Copperman and entourage recently visited Topeka to see the *Toaster* in action, and apparently came away fully impressed. Some CBM uppity-ups apparently now consider the NewTek *Video Toaster* important enough that they are thinking about revamping the A3000's video slot to fit the *Toaster*, rather than the other way around...

> 8-Bit Update: We hear that *Run*, the last all-C64 magazine, will be cutting back to a bi-monthly schedule starting with the January 1991 issue.

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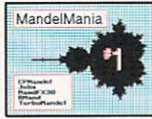
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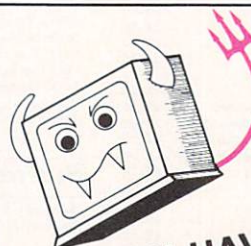
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Oran J. Sands III Video on

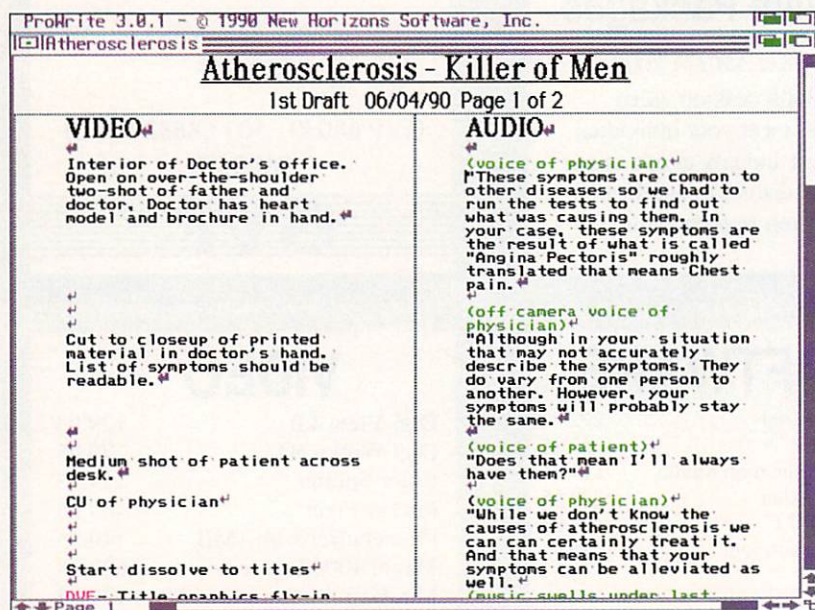


Figure 1. ProWrite 3.0 lets you align two columns on-screen, which makes it perfect for scriptwriting.

Let's talk wordprocessing. Wait! Don't check the table of contents again. This is the video column; it's just that this month's column is devoted to scriptwriting, the low-tech part of video production. Because there's nothing better for scriptwriting than a fast, capable wordprocessor, and the Amiga has plenty to offer.

I bought my first Amiga as an electronic paint system, its intended use being to make graphics for television. A short while after starting to use it for its intended purpose, I decided to explore its capabilities as a computer. I tried to put together a traditional audio/video script only to be frustrated by the wordprocessor's lack of ability to do columns. I was pretty disgusted when I dragged my tired body back to the typewriter afterwards to finally write the script.

I remember those days all too well, and judging by the comments I get from others I'm not the only one who traversed that rocky road. So sound the trumpets and let the dancing begin, because there is an Amiga wordprocessor that can finally create true parallel columns. And it's none other than New Horizon's ProWrite 3.0. Before we go into details about

Prowrite's new-found features, let me explain what an Audio/Video script is for those of you unfamiliar with the term.

The A/V Script

There are probably as many different ways to write a video script as there are people who write them. But there are a handful of styles that are embraced by large segments of the industry, and of those the A/V script or Audio/Video script is the most common.

Scriptwriting is similar to most writing in that it is a creative process, the final product coming to fruition only after numerous rewrites and revisions. Not surprisingly, therefore, wordprocessors have been widely accepted by scriptwriters. Factor in the need to make changes due to client requests, budget problems (change that Concorde flight scene to a bus ride), etc., and the ability to make quick rewrites becomes a godsend.

Unlike most writing, however, scriptwriting must not only convey the words you'll hear, but also needs to convey to the reader a sense of what the viewer will see. You could intermingle the descriptions of the visuals with the narration script, but that can be very confusing. What you need is a way to keep the visual information separate but still aligned with the audio information. Using a typewriter, that's a fairly simple proposition. For a wordprocessor, it's damnably difficult. So difficult that only a few programs in all the world can accomplish it, regardless of what computer you wish to name.

Imagine that all your visual information is in a column half the width of the page. Make it the left half. On the right half place another column and put all your audio script in it. At any point in the audio script you should be able to look across the page to the other column and read what the scene is like at that point. Comments about the visual shot might read "Extreme Close-up of teeth. Pull camera back slowly to reveal lips and mustache," or "It's a hot and muggy night. The heroine crosses to the window and looks out the window. Fade in title graphic." These descriptions could easily get very specific, setting the theme or tone of the scene. Such descriptions can help the script reader more easily visualize what the writer/director may have in mind.

This is an audio/video script, and I think you can

info's

Dr. Video

writes a

video script

with

New Horizon's

ProWrite 3.0.

begin to see why it is so powerful. It can let the production crew and actors easily visualize how the various parts of the program fit together. It also communicates to the client very clearly... and a happy client pays his bills quickly! It helps avoid miscommunication and cuts down on confusion about what happens where, when, and how.

Until recently, this sort of script was almost undoable on the Amiga. And with so many Amigas sitting in studios, it was a shame they couldn't be used for this type of scripting. Several users have commented to me that they keep an IBM around just for scriptwriting. Hopefully we can now turn this trend around. *ProWrite 3.0* has added columns, and in doing so has inadvertently added the ability to easily create a/v scripts.

ProWrite 3.0 was first shown at the NAB (National Association of Broadcasters show), a very heavy-duty professional equipment show. Still, despite the competition it gathered several admirers around, including one scriptwriter from CNN who preferred it over the mainframe program he was currently using. For a program that wasn't designed for such scriptwriting, *ProWrite 3.0* does remarkably well. Let's walk thru starting an a/v script.

Getting The Job Done

After starting up *ProWrite*, look for and select the menu selection "Layout." It is here that you can select columns; in this case, two of them. Also select the icon representing the sideways arrow. It isn't clear at first, but these icons determine whether you will have newspaper style columns with the text flowing from the bottom of the first column to the top of the next, or columns that relate to each other side-to-side. It is this side-to-side relationship that makes *ProWrite* so special.

After setting up columns you may wish to turn on the page guides. These are faint lines that show you where the columns actually start and stop. For now, also turn on the "invisibles" so you can see where the carriage returns are. If you were to start typing right now, your words would end up in the left column. Tradition has it that the audio or main narrative is in the right column, so merely hit the Return key. Your cursor is moved into the right column. In fact, every time you hit Return the cursor will jump between the columns.

At first this is a nuisance, but you'll find that when you wish to make a paragraph break you merely need to hit the Return key twice and you'll be back in the same column. Notice that this also puts down a carriage return in the other column. Think of this as a "hook," a place to attach the visual directions when you are ready to start writing them.

But back to our audio script. If you wish to place blank lines in the script for spacing but don't want to place "hooks" into the other column, use a "soft" carriage return (a shifted Return). This keeps the cursor in the correct column but moves it down-

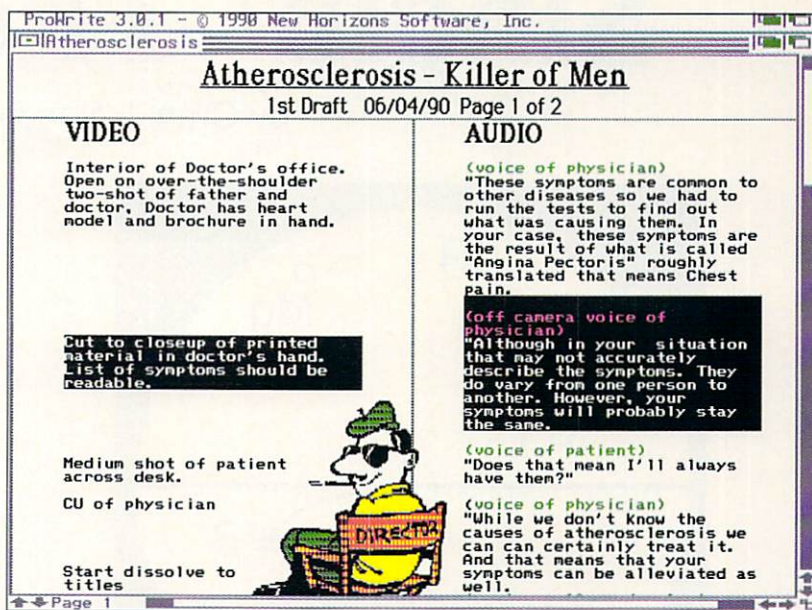


Figure 2. Integration of graphics and two-column cut-and-paste are handy bonuses.

ward. During your writing in this column you can use all of *ProWrite's* usual wordprocessing features: Paste, Cut, Copy, SpellCheck, etc. Or, if you prefer, you can write the narrative with another wordprocessor and then load the text into *ProWrite* for working it into a/v script format.

Once our audio script is finished we need to write our visual directions. Using those "hooks," we see that we can place the cursor in the other column and create new paragraphs that will align with those on the the right. In fact, should the visual directions take up more room than the audio, the following audio paragraph will be forced downward. It will not be overlapped by the visual information from the previous audio paragraph, thus avoiding confusion about the proper timing of actions.

The most spectacular feature is found when it comes time to edit or move an entire scene. You can highlight the visual *and* the audio paragraph and move them as a pair - no need to move them separately or to delete them and rewrite them where you now need them. This is an incredible time saver. It was this feature that won over the gentleman from CNN.

I won't elaborate on *ProWrite's* other features, leaving that for other reviewers to do. I will, however, briefly mention the ability to use standard Amiga fonts, to include IFF images (why describe the scene when you can show it?), to print via Postscript, and to never drop a letter regardless of how fast you can type. These are but a few of the great features found in *ProWrite*.

Every good video program starts somewhere as words on paper. How you get them there and what they say is very important in helping you clearly communicate your vision. Take advantage of your Amiga and let it help you do something more than just make graphics!



ProWrite 3.0

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Singin' The Blues

by Oran J. Sands III

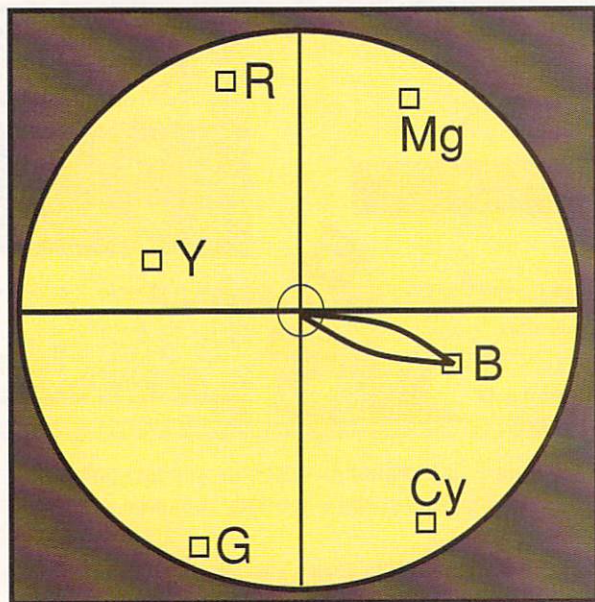


Figure 1. Vectorscope showing a blue signal (simulated).

Ever suffered from the "blues"? I mean those blue-colored videos resulting from too much daylight streaming in the windows during your video shoots. The blue occurs when the camera is white-balanced for tungsten light, which is reddish in nature. The sunlight, which is bluish in nature, comes in the window and is always *much* brighter than you think. All of us have these lighting "blues" at one time or another. But there's a way you can use your Amiga to make those blues go away.

Shooting videotape in mixed lighting is always a tricky situation, even for the pros. Setting your white balance correctly can help out a lot, but with the preset controls on most camcorders you haven't got much choice. Thus you often end up with video that's too blue from sunlight, too reddish-orange from tungsten lighting, or sometimes even kind of greenish from fluorescent lights. What you need is a way to counteract the excessive colors. What you need is a color corrector.

Color correctors are rather expensive items (until recently, anyway). Even with recent price reductions, the cost is often out of range for the average video hobbyist. The cheapies often don't really work and are nothing but color hue (tint) adjustments. Tint adjustments can change the color but won't correct the original problem. What you need to make a basic color corrector is a way to mix a

color with the video that needs correcting. Guess which computer is ideal for this purpose?

Controlling Color

All you need is one Amiga, *Deluxe Paint* (or a similar paint program), and a genlock with faders (Digital Creations' *Supergen* is a good example). And, of course, you'll also need two VCRs. Feed the signal from the bad tape thru the genlock and to the other recorder. Now pay attention to the next part.

Our bad tape for this example has too much blue in it (this is the most common color problem encountered). We don't have anything that can remove the blue, so we'll do the next best thing: we'll add the color that is its complement, which in this case is yellow. How do we do that? Easy. Let's just make a picture with our paint program - a picture that's nothing but yellow. The easiest way to do this is to simply use the palette requester to turn color zero to yellow. Start with red, green, and blue values of 12,12,00.

With that accomplished, we'll simply use the genlock faders to fade between the video and the Amiga picture. (Don't fade-in the overlay where color zero is transparent; use the "dissolve" mode.) This has the effect of adding yellow to all of the video. Since yellow is the opposite of blue, it will cancel it out. Of course, if we add too much yellow we'll have a yellow video instead of a blue one. To properly adjust the level look for areas of white in your video. When those areas finally turn white instead of bluish-white, you're all set. Just fine-tune the fader until the levels are correct. For extra fine tuning you can even adjust the palette to change the color yellow itself. Since the "blue" we've been discussing probably isn't pure blue to start with, the yellow shouldn't be pure yellow, either.

Fishing For Complements

But if you don't know what colors are complements of others, how can you properly choose colors to use when trying to color correct video? You could use a vectorscope if you had one and knew how to read it. Since you probably don't have one, I'll give you one for free. Look at Figure One. What you see there is a simulated vectorscope face. We consider the center of the scope as ground zero. Any signal found at this point is said to have no color value or saturation. Move out closer to the edge of the outer circle and your color saturation increases. The actual color hue is determined by where you are in rotation around the center.

Notice the marks denoting the "pure" colors and their mixes. Look for Blue. Now draw a line thru

A genlock
with fader
can double
as a color
corrector and
effects box.

the center of the scope face and out the other side. Make the length of the line the same as the the one leading from the center to the Blue. You'll notice that we end up right at the Yellow mark. (The drawing may not line up exactly). Try this with any of the primary colors on the scope face and you'll see how the complementary color can be located. Use this technique to guess which color you might need for color correcting your tapes. Yellow-green can be found (obviously) between yellow and green. The complement to yellow-green would be between blue and magenta.

Of course, if you actually own a vectorscope you can actually use it to fine-tune your color correction. Look at your video and then add the appropriate complementary color. To properly evaluate your video, though, you need to examine a scene of almost all white. Ideally there will be no coloration at all in the white. Practically, however, there will be, and that is the color you wish to remove. If you suspect you may need to color correct something you're shooting, then try to shoot a white card. That'll help later to check for the correct "whiteness".

If you wish to see color correction in action, follow the steps outlined above but with one minor change. Make only *half* the screen yellow (or whatever color you're using). Leave the other half black. The result is a tape that will be color corrected on only one half, making comparisons simple. (See Figure 2.)

A Whole Bag of Tricks

Gee, that sounds like fun. Let's take this technique one step further. Add color not to color correct, but to colorize! There are times you may wish

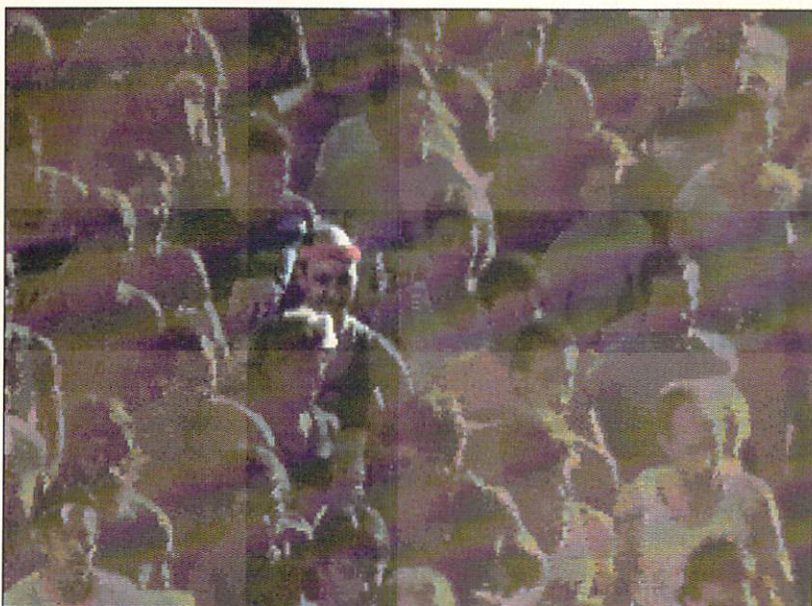


Figure 3. You can use the same technique to achieve some stunning "colorization" effects. (Simulated effect.)

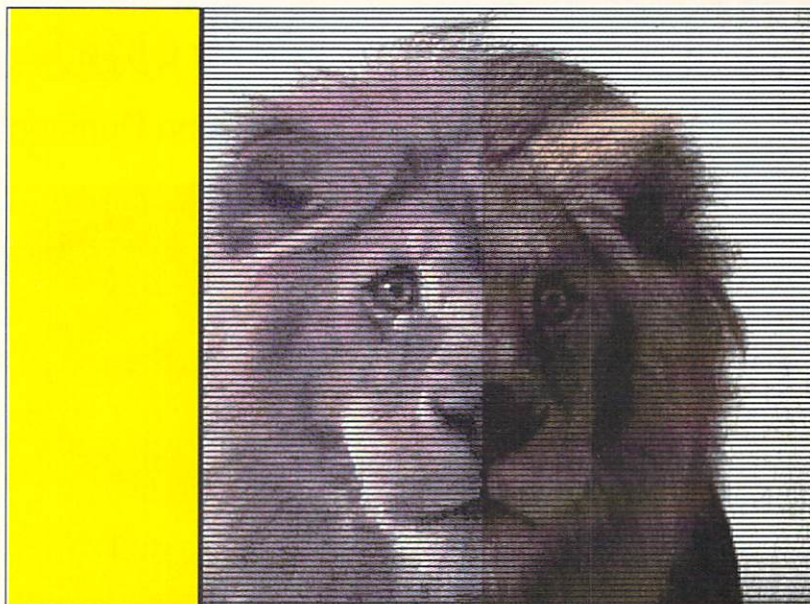


Figure 2. A genlock with fading capabilities can correct a blue video image (center) by overlaying a yellow Amiga screen (left). Corrected image is at right. (Simulated effect.)

to shadow the background of a shot while leaving a small portion of the shot "highlighted." Preview the effect by running the tape thru your Amiga genlock and using the paint program to "paint out" the section to which you wish to add color, leaving unpainted the section that needs to "pop" out of the background. Fading partially to the Amiga picture will cause the painted areas to colorize and the unpainted section to "appear." Use patterns of stars, binoculars, etc. for more stylized effects. Use your imagination! How about an Amiga screen with different portions of the screen colorized with different colors? Scottish plaid anyone?

Once again the Amiga proves its worth to video professionals. Used sensibly, the Amiga serves as a true video workstation. Whether used as a paint box, a character generator, a DVE unit, or a color corrector, the Amiga really shines.

Meanwhile Back at The Ranch...

This portion of this column will be devoted to trivia, rumors, hearsay, lies and opinions. Be forewarned!

I've gotten a number of complaints lately that some genlocks won't work with the new REV. 6 boards in A2000s. These are genlocks that should operate with no problem. The cause was at first thought to be bad Super Fat Agnus chips. It really turned out to be that Commodore started shipping 2000s with jumper 300 set incorrectly. If your machine won't boot in with a genlock attached, then check to see that J300 is in the proper position as indicated in the A2000 manual.



The Video Toaster Cometh

by Benn Dunnington

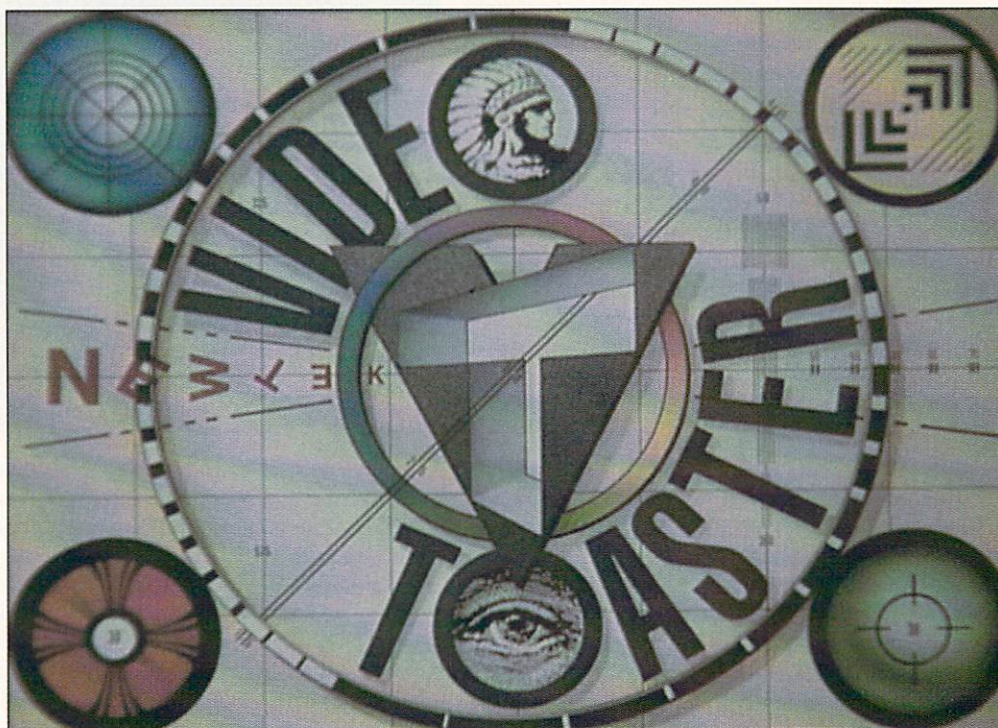


Figure 1. A 24-bit drawing of the *Video Toaster* logo, created on the *Toaster* itself.

We took our first look at the *Toaster* - and printed the first-ever views of *Toaster* effects in action - way back in issue #20, May/June 1988. Since then, the *Toaster*'s list of features has grown dramatically. As I witnessed on a visit to the NewTek headquarters in Topeka this week, the *Toaster* has evolved from a video effects box into a complete video studio-in-a-box, with professional features many pros only wish for. Best of all, the *Toaster* is - hold onto your hats - actually shipping!

Well, let's qualify that a bit. As this is written, a few *Toasters* have been sent to a very few insiders. But the assembly lines are firing up, and it's not much of a stretch to believe that the first actual shipments to paying customers will be going out by the time you read this. There will still be some limitations, at least for a while, on who can own one. For the time being, the *Toaster*'s Class "A" FCC rating is imminent; once it comes through, developers and commercial users can own one, but not home users. FCC testing goes on, however, and NewTek is confident that Class "B" consumer approval will follow soon.

We've talked some about the *Toaster*'s specs and we've even shown you a picture of its guts (page 33, *INFO* #31). Next issue we plan to present a full-blown hands-on *Toaster* review. But for the moment we'd like to take a few paragraphs to discuss *Toaster* Philosophy.

NewTek's *Video Toaster* promises a revolution in personal computers on a scale equal to the revolutions brought about by *VisiCalc* on the Apple II and Desktop Publishing on the Macintosh. Just as these developments changed financial planning and publishing forever, so the *Toaster* holds the promise of radically changing video production. Even better, it promises, as those earlier technologies did, to put high-end capabilities in the hands of end-users. Thanks to spreadsheets, business managers no longer have to look to teams of accountants to create reports and financial plans. Thanks to desktop publishing, companies and organizations no longer need to farm out the creation of flyers, brochures, and newsletters. And once the *Toaster* hits the market, they won't have to hire an outside company to produce tutorial and promotional videos, either. And just as desktop publishing has allowed many more people to make more-than-adequate newsletters, *Toaster*-based "desktop video" will allow many more people to make their own videos. (Of course, the down side to all this is that we'll see a great many bad videos, just as we now see a lot of bad newsletters. But that's the price you pay for new technology.)

So by the time you buy a *Toaster*, and an Amiga 2000 to plug it into, and a couple of VCRs and cameras and monitors, you've got a pretty powerful little video studio that cost you under \$10,000 to set up. With the *Toaster* you get DVE (Digital Video Effects) software for live video effects. You get *ToasterPaint* for 24-bit graphics manipulation and

creation. And you get *LightWave 3D*, for 24-bit 3D object creation and animation. This is in an industry that is used to paying \$20,000 and up for any *one* of these software or hardware items. The video world has already taken note of the *Video Toaster* at the NAB and SIGGRAPH shows, and is preparing to be set on its ear.

I hear a few Amiga die-hards asking, "But what about the Amiga community?" Well, the *Toaster* puts a TV studio onto a board that fits into an Amiga 2000. This is going to sell a *lot* of Amigas. And that's going to sell a lot of hard drives, expansion RAM cards, monitors, printers, and even wordprocessors, spreadsheets, and utility software. Maybe even some games. Because once people buy a computer, they want to use it for everything. The folks at NewTek think it will help drive the Amiga market as nothing else has. They are probably right.

TOASTER SPECS IN BRIEF

The features of the *Video Toaster* are impressive (especially to video pros who know what they all mean!) First of all, the *Toaster* produces a broadcast-quality signal: NTSC RS-170A with a 16.8 million color palette. The DVE (Digital Video Effects) engine is capable of producing just about any sort of wipe, fade, or transition you can imagine. These are all done under software control, so the set of possible effects is practically unlimited, and the *Toaster* will ship with quite a few built-in. (For a screenshot of the main *Toaster* special effects editor, see page 63 of *INFO* #31.) There's a 35ns character generator that comes standard with 25 fonts, built-in shadows, outlines, and the like, with 100 pages of online storage to keep it all in. Provision is made for color processing, letting you produce color negatives, posterization, solarization, and photographic filter effects - all in over 16 million colors.

There are not one, but two 24-bit frame buffers which can load individual frames from hard disk in under three seconds. An integral frame grabber can capture up to eight pictures from live video, each in 1/60th of a second. Up to 1000 of these grabbed frames can be stored on disk and later retrieved into the Digital Still Store. All the digital effects and transitions can, of course, be performed between the buffers.

The heart of the *Toaster* is the Production Switcher, which coordinates the dissolves, wipes, key, and color effects among all seven video channels. These consist of four synchronous live video sources, the two frame buffers, and a background matte (color field) generator. This switcher can be combined with the DVE to make possible video manipulation the equal (and in many cases better) of anything you see on broadcast TV. The user interface is all mouse-driven point-and-click to make it simple to use. Because the gadgets and buttons are in software, the *Toaster* is open to all kinds of future modifications, enhancements, and improvements that just wouldn't be practical on an all-hardwired machine.

Despite the long list of features available in the initial release of the *Toaster* software, there are even

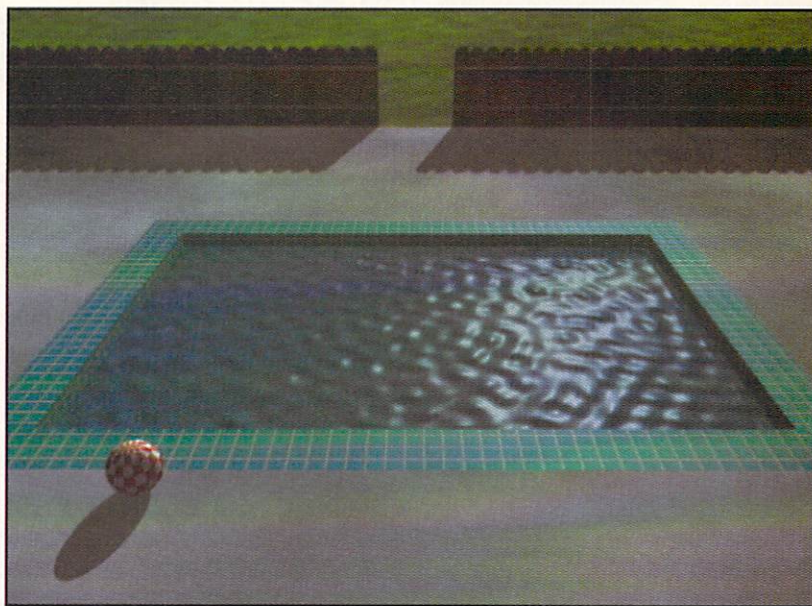


Figure 2. "Swimming Pool," a 24-bit 3D rendering created by *LightWave 3D* author Allen Hastings.

more capabilities built into the *Toaster* hardware that will be released by future software upgrades. We've heard the NewTekkers talking about some Top Secret proprietary capabilities that you just wouldn't believe. This is a product that will keep surprising people for a long, long time after its release.

ADDITIONAL SOFTWARE

NewTek recently announced that they will be bundling *ToasterPaint* with the *Video Toaster* at no additional charge; this is a paint program for creating and manipulating 24-bit images. It is similar in many ways to NewTek's *Digi-Paint* for HAM pictures, though more advanced.

They will also bundle *Lightwave 3D*, a 3D modelling, rendering, and animation program by the creator of *VideoScape*, Allen Hastings. (See John Foust's 3D column in this issue for a screenshot of the *LightWave 3D* editing screen.) This incredible 3D program has to be seen to be believed. It features an intuitive four-view modelling and editing screen with real-time perspective animation of the object being manipulated. Some of *Lightwave*'s more esoteric features include gradient skies, fog effects, bump mapping, and a wide range of texture-mapped and variable surface attributes. NewTek has even had a team of artists at work preparing a huge library of 3D objects that will be available along with the modeling program. If you've seen the videotape demos of Allen Hastings' early *Lightwave* animations, you're probably as hungry to get your hands on this pup as I am!

Giving away programs of this quality is unheard-of, and it will sell a *lot* of *Toasters* for NewTek. *Lightwave* alone is worth \$1595; you could almost think of the *Toaster* as free! It's an interesting strategy, and one I think will allow them to reach their goal of knocking out the established competition.



Video Toaster

Preview

\$1595.00

NewTek

215 East

Eighth Street

Topeka, KS

66603

913-354-1146

Peggy Herrington on Music & Sound

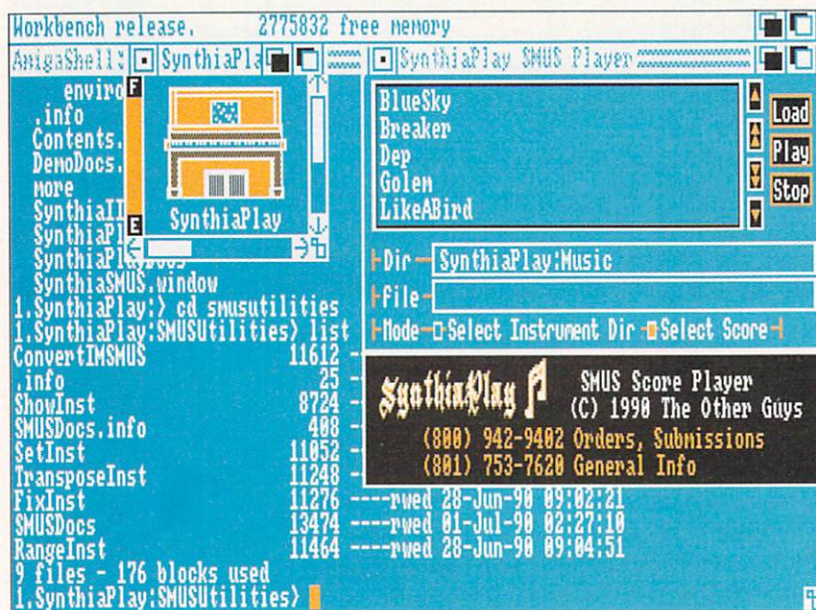


Figure 1. The Other Guys' freely distributable SMUSic player.

This issue,
Peggy examines
the trials and
tribulations
involved in
putting together
a little
multimedia
background
music.

Amiga SMUSic is a mess, and the world is about to hear about it. With the current move toward multimedia production, more people are going to get into Amiga-produced music as a background task, particularly internally-generated music. And a lot of them are going to be terribly surprised.

Serious musicians laugh at Amiga-generated music, and with good reason. The music the machine is capable of playing straight out of the box may be great for hobbyists but it's a joke to professionals - particularly those robotic-rhythmed scores that most note-editing programs produce. But the real problem with Amiga-generated music lies in the 8-bit sound resolution that is inherent in 8SVX instruments. (It's not called *eight*-SVX for nothin', you know.) 8-bit resolution simply does not permit the creation and retention of enough data for quality musical instrument sounds. And there are other annoying problems with 8SVX (and SMUS) as well. It's sad but true that anyone who is truly serious about making music with a computer quickly turns to MIDI.

One Man's Story

Picture, if you will, a successful travel agent who wants to make a multimedia presentation using video footage and stills he's shot on the photographic safaris

in which he specializes. Being the confident type, he reads a couple of magazines, talks to the salesmen, and finally decides to get an Amiga. And before long, because he has some talent and a goal, our safari specialist is up to his armpits in animated alligators.

Actually, he's quite happy with his hard-earned 15-minute presentation, but despite the sound effects, the dazzling screen wipes, his nice video section, and those colorful crocs, he still feels it's missing something. Wait! It says right here that *AmigaVision* (or whatever authoring system he has) can play background music. So having growled through piano lessons as a kid, he reads up again and goes out and buys *Deluxe Music Construction Set (DMCS)* and the simplified sheet music for "Baby Elephant Walk."

Many hours and mouse moves later, our travel agent has almost two whole minutes of potential background music. Unfortunately, even to his tired ear it sounds alarmingly like a bunch of croaking bullfrogs. Figuring he must be doing something wrong, he calls the computer store and they tell him that the local users group has better-sounding instruments. So he tracks down the user group librarian, from whom he gets not only new instruments but some tips on using *Deluxe Music's* play-styles, a technique that applies envelopes to 8SVX sounds which can indeed make a wonderful difference in *DMCS* music. Sure enough, a few *DMCS* sessions later his wife can actually tell what his song is supposed to be. She also remarks that it sounds like a bunch of bullfrogs playing wax-paper-covered combs, and while he admits to a certain adenoidal militant quality, it isn't *that* bad.

And that, of course, is when the fun starts. *AmigaVision* refuses to read the score. He copies it here and the instruments there, rearranging them in and out of drawers, but it still won't peep. So our man - who can practically spout the video instructions in *AmigaVision's* manual like some artsy whale - finally gets around to looking in its cryptic (to him) little section on music. Vaguely recalling something from their earlier conversation, he phones the user group librarian. "What did you say S-M-U-S is?" he asks. After sitting politely through 30 minutes of jargon about standards which, by now, our erstwhile travel agent doesn't even want to understand, he finally gets the gist of it. He boots *Deluxe Music* for the umpteenth time and reloads his score, saving it to disk again as the librarian instructed - not with SAVE but by selecting one of the last items on the first pull-down menu: The mysterious SMUS format.

And what do you know?! *AmigaVision* doesn't choke. Shouting excitedly at his wife he flings back

his chair and scrambles to his feet. By the time the disk drive light goes out he's practically quivering with anticipation. This is a major victory!

And then, as the music starts, he hears those damned croaking frogs again. "What happened to the wax-paper combs?" the wife asks, thereby throwing him to the alligators. "That was better than croaks. And why are they singing so high?" Thankfully, she wanders back to her TV show and the music stops far short of the end of the presentation. It's all he can do to stand there quietly, a saying he suddenly recalled echoing off the walls of his mind: "SILENCE IS GOLDEN... Silence Is Golden... silence..."

SMUSic Problems

This isn't a joke, and if you think I'm making it up then you haven't tried it. I was equipped with a degree in music, years of digital experience, and extensive industry contacts when I first encountered these problems. I finally found solutions to most of them, but lots of people are going to rediscover them now, thanks to authoring programs like *AmigaVision*, *CanDo* (which, contrary to what the box says, won't play background music) and *ShowMaker*. Some of which problems are:

- Authoring programs won't play *DMCS* scores. You must use a composition program to enter music (i.e. *DMCS*, *Sonix*, etc.) and then save it in SMUS format for background music purposes.
- SMUS does not accommodate *DMCS* play-styles. Don't use them if you're going to save a score in SMUS, else your wax-paper combs may turn back into frogs.
- Some instruments sound an octave off in pitch when played by a different music program. I've heard conflicting explanations for this and it's always somebody else's fault. I finally gave up asking why.
- Although the Amiga does audio in two-channel stereo, instruments cannot be directed left or right. Play it in mono with a good amplifier and speakers.
- All contemporary music is copyrighted. Unless you have a license from ASCAP/BMI you're legally limited to tunes written before circa 1900, hence the popularity of classical music.

SMUSic Solutions

The only commercial developer I know addressing these problems are The Other Guys, and they're doing it through public domain distribution. In fact, a viable alternative to entering a song by hand with a composition program can be found that way, too - namely music files on electronic bulletin boards and commercial networks. While most of the hundreds of scores there are in *DMCS* or *Sonix* format, if you own that music program you can easily transfer the file to SMUS, perhaps tweaking it in the process, saving yourself hours of tedium. Loads of new 8SVX instruments are online as well.

Along with a demonstration version of their splendid new *Synthia II* instrument-making and editing software, The Other Guys have released a program that plays SMUS files plus a collection of CLI-based

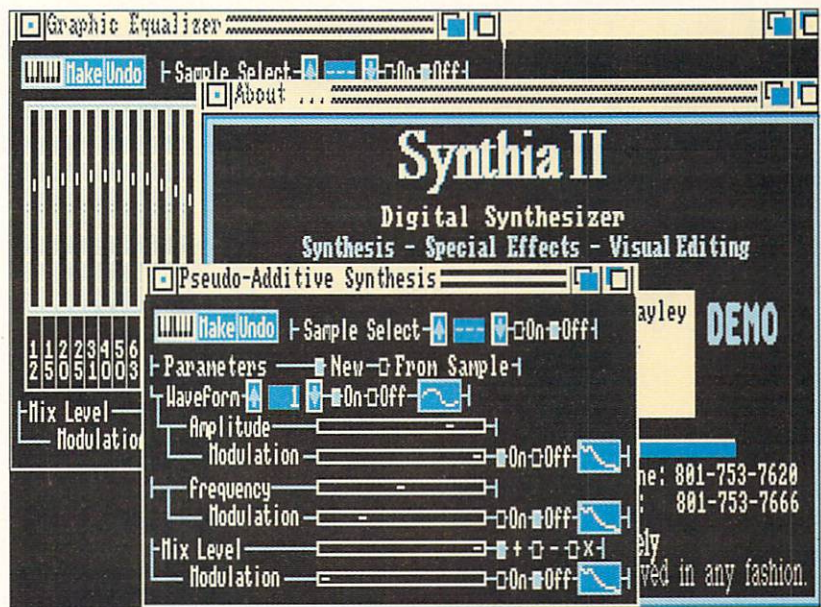


Figure 2. The freebie demo version of *Synthia II*.

utility programs with instructions for adjusting SMUS scores. Available from networks and boards, they include utilities for:

- Playing SMUS scores from Workbench or a CLI
- Showing what instruments are used in a SMUS score
- Changing instruments in a SMUS score *without* using a composition program
- Deleting from a SMUS file any instrument that is not actually played
- Showing the range (highest/lowest pitches) an instrument is set to play
- Transposing an instrument into a different range, up or down

A possibility for improved Amiga-generated music instruments lies in a format called Audio IFF (which is already in use on the IBM/PC and Macintosh) which Commodore is considering blessing. The aforementioned SMUS playing program by The Other Guys plays these AIFF instruments on the Amiga, and comes with a number of them, plus scores for your listening enjoyment. They're much improved over 8SVX instruments. The Other Guys will soon release a jukebox player and a transparent background SMUSic player for commercial product development as well.

D.C. Al Fine

The impact music has on a multimedia production is greatly undervalued, and it is well worth the trouble getting it into yours. If you're planning on working with background music, I highly recommend The Other Guys' SMUS utilities and player. If you can't get them online or from the Fred Fish collection, contact The Other Guys directly at the address or phone number at right. They'll provide you with a copy of the disk for \$5.00, including shipping.

SMUS utilities

& Synthia II

demo disk

\$5.00

The Other Guys

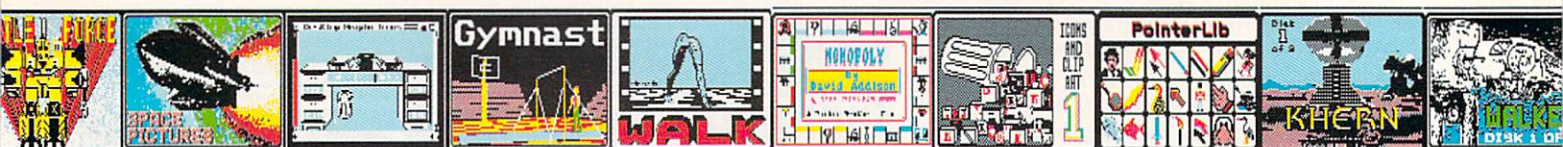
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Logan, UT

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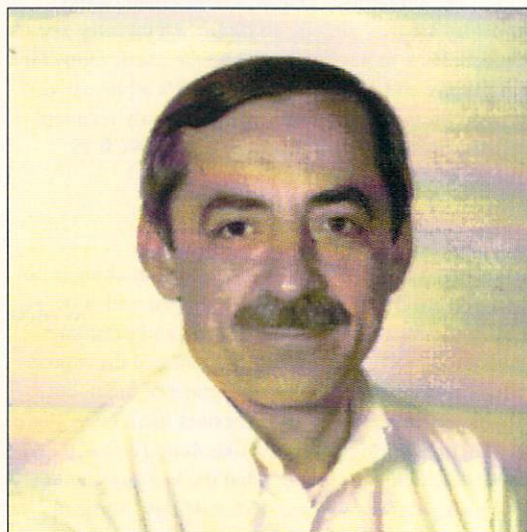
801-753-7620





Measure of the Man

by Sue Albert



George Christensen

Self-proclaimed to be "The World Champion Tinkertoy Engineer," collector and expert restorer of antique wood-gear clock, accumulator of original 78 rpm recordings, author of a unique desktop publishing program and the most popular download on People/Link, fractal and color-cycling wizard, and now an Amiga software entrepreneur, George Christensen's multi-talents simply won't fit into one reasonably-sized beginning sentence.

As advised by the late Joseph Campbell, Christensen has truly "followed his bliss." His sustained childhood curiosities about mathematics, machines, clocks, and music, have formed a recursive motif behind his explorations, setting him on an unerring path to the computer. Christensen has been fortunate. He has escaped severe nerd-dom or an ascetic hackerhood by dint of a quick and quirky sense of humor and an acute anti-elitist sensitivity. Because his choice of personal computers has been consistently Commodore, we can share in his good fortune. Try any of his uploads to People/Link under GeorgeC, such as the favored *Drawers.LZH* [21062] or *Strange Attractors*.

Christensen started life in New Jersey. He began tinkering at an early age and was collecting and repairing antique clocks at twelve. While in high school he was privileged to study mathematics under a rare teacher so inspirational that his classes progressed far beyond high school levels into calculus and analytical geometry. This gave Christensen a solid foundation and focus for his attraction to mechanical, digital, and mathematical things "...that are so clean, orderly and neat... beautiful, like music." Instead of college, Christensen

went directly into the U.S. Air Force where he received training in electronics and worked with airborne computers.

Discharged from the Air Force in the late 60s, Christensen came to San Francisco and went to work for IBM. "Then there was no such thing as a Computer Science degree. If you wanted to know about computers you went to work for IBM. Oddly enough, the most common college degree held there at that time wasn't science or engineering, but music."

"I didn't notice any essential difference between the Air Force and IBM, except at IBM I had to pay for my uniforms... and sing for my supper." Unique at that time, IBM had a guard at the gate not for security, but to check that male employees were wearing a tie and properly matched jacket and pants. "You could not leave the building during the work day, even at the lunch hour. You got 30 minutes to eat in the cafeteria and then a pianist played company songs. Singing was compulsory."

Christensen eventually left IBM with an abiding distaste for the company, MS/DOS machines, and "elitist" programmers. His new career as a systems analyst for major banks in San Francisco and, in recent years, as an independent contractor gave him the opportunity to fulfill a personal mission - to de-mystify computers and make them more accessible to the user. "Programmers write programs for other programmers, not for 'ordinary' people. I've had a lot of experience writing documentation and usable front-ends for complex systems. I aim to make things so clear and so friendly that someone with only a pulse and one moving body part can make the thing work." Christensen assisted in set-

Long-time
.info writer
Sue Albert
recently filed
this report on
intriguing
Amiga artist
George
Christensen.

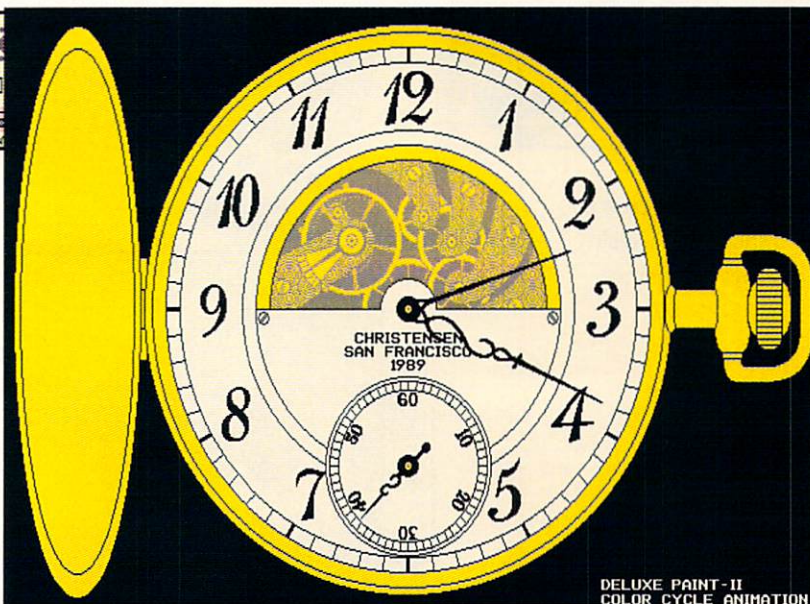


ting up the first ATMs, the one computer that everyone can use.

A daily diet for years of MS/DOS and mainframes made George a dull boy. He wouldn't tolerate as much as a calculator in his home. Then in the early 80s a friend convinced him to take a look at a VIC-20. "H-O-O-K-E-D! My first thought was 'Hey this isn't a computer... this is fun!'" All the neat and tidy digital things were there, but you could make things move or draw a flower." A steady stream of Commodores then marched into George's life, infiltrated his bookcases, and took hostage his dining room table, but in exchange they released his aesthetic skills.

There's a great view over San Francisco's Noe Valley and the East Bay from George's computer table. In comfortable order he is surrounded by his collection of clocks, neatly stacked 78s, and his mini-Commodore "museum." In working order are his original VIC-20, his SX-"I'll never part with it!"-64, several (now extinct) Commodore 1520 Plotters, a C128, an Amiga 1000, and a new "loaded" Amiga 2500 with 5 Megabytes, a hard drive, and reluctantly, a Bridge-board "so that I can now work from home via modem." Christensen still uses his Commodore MPS-1000 printer, prints beautiful labels on his five-year-old Cannon PJ 1080A printer and his new HP Paintjet, and pulls gallery-quality 3D color fractal landscapes from a Roland DXY-880 flatbed plotter.

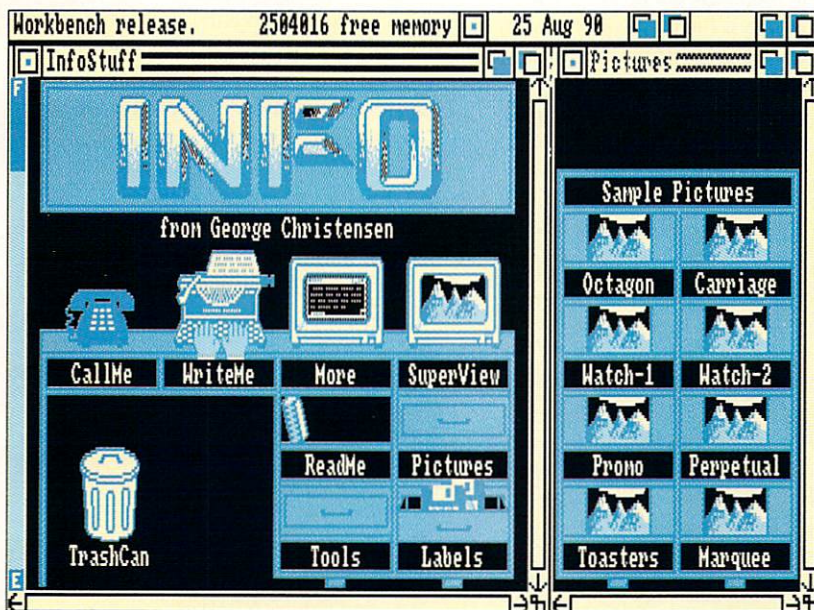
Christensen has kept every issue (400+) of *Scientific American* magazine since he first subscribed at 13. "Then it was about the size of the *Enquirer* and



One of George Christensen's fascinating color-cycle-animated clocks.

was printed on newsprint." The landmark article in 1978 on the Mandelbrot Set and fractals fired his imagination. "Now scientists are finding applications for fractals in biological forms and even the study of chaos, but until there was an output device, no one really knew what to do with them." The 1520 plotter was an elegant and inexpensive answer for George. With his C64 he wrote several fractal programs and utilities that would print to the paper 'adding machine' tape used by the 1520 plotter. Since the programs needed documentation, he included a publishing program on the disks that would print sideways in several ball point pen colors. When the output was folded on printed guidelines, it formed a little book complete with charming graphics. The program could then be used to publish anything the user wished. This mighty-mite program anticipated the desktop publishing revolution with sophisticated features like "box around text" and alternating page numbering. [The disks, called *The Plotting Shed*, were advertised in the *INFO unclassifieds* up until Issue #21 (July-Aug. '88) and are still available from the catalog of R. Scott Derrer, 1529 Longmont St., Boise ID 83706.]

Christensen exchanged charm for sheer beauty when he purchased the Roland DXY-880 flatbed plotter. The three-dimensional fractal plots he programmed from the C64, the C128, and later the Amiga 1000, created gorgeous landscapes. An investment in good paper and felt tip and Rapidograph pens produced stunning results. One curvaceous shell-like repeat formed a classic design using only straight lines. This plot in black and white was used to line the keyboard of a harpsichord by a musician friend. "I really love the idea of being immortalized inside a harpsichord." Experiments with 3D surface plots produced several versions of a handsome flower design. I commented on the relation of his pieces to bas-relief and sculpture. "Oh I'm aware of that. If it were not so

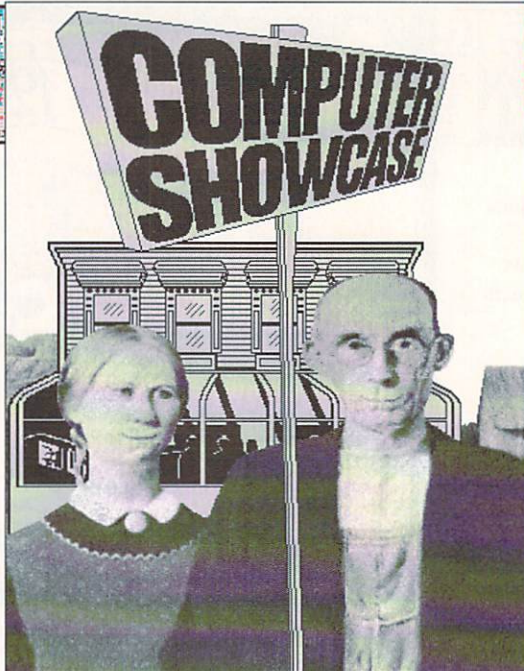


The clever "DeskBench" analogue, custom-created by Christensen for friends and clients.



Above are samples of Christensen's disk labels for Premier Software.

Amiga Gothic, an entertaining example of Christensen's commercial creativity.



expensive, I would love to experiment with a 3-dimensional wax cutter."

The 2500 has given Christensen enough speed to think about programming again. "I have Lattice and Aztec C and I'd like to expand my 3D surface design program and put it into the public domain."

The amazing acceleration of the 2500 with *Professional Page*, has also put a wicked gleam in George's eyes at the mention of desktop publishing. He plans to "burn rubber." During a hiatus from his regular contract work in 1989 he worked at Computer Showcase, San Francisco's only all-Amiga store. He created an amusing series of ads for owner Judy Tergis, which ran in local publications. Using *Digi-View*, *Deluxe Paint*, and *Professional Page*, he combined the captured images of Judy and the employees with outrageous borrowings from popular art work to lampoon the stuffy/slick advertising of the high-priced brands. In his favorite ad he brought smiles to both readers and those grim visages in "American Gothic."

"*Deluxe Paint* is the greatest videogame ever designed. I bought the Amiga 1000 in '86 because it ran *DPaint*. There wasn't much other software. I got very turned-on by color cycling... it's really super-cheap animation. It's actually a lot like clockwork. You can have these color ranges rotating, and overlapping, and meshing like gears. If you have several color ranges, one with 4 colors and one with 8, and the one with 4 runs twice as fast, then they will pass colors back and forth."

Christensen has done an amazing series of moving watches, clocks and imaginary engines. "I digitized a watch face and the works and put them together in *DPaint*. It was a challenge to animate the reciprocating springs. I recently added the effect of machine milling to the parts." His purely imaginary perpetual motion machines are a great example of what could be done for a whiz-bang business or educational demonstration.

The best expression of George's sympathy for the end-user can be found in his developments for the WorkBench. For friends he custom tailors "DeskBench" disks that have humorous personalized and animated icons. Behind the clever graphic facade, each icon is a modular project icon running a script file to give the user a consistent interface. "The WorkBench is to the CLI what American Sign Language is to English. Why should I have to remember to fire up the CLI and type in the same commands every time I want to use a program? That's what the computer was invented to do! I put necessary commands, like where to look for font files, in a script file so that each individual program has the environment it needs. Unfortunately I can't anticipate another person's needs, so I can't tell anyone exactly how to build one themselves or create a product that will do it automatically.

Christensen does give you a working example and some tools for your own WorkBench creation on the three-disk *DeskBench* assortment available from his Premier Software collection of PD and shareware pro-

grams. "Originally, because I'm just too lazy to be disorganized, I started making labels for my work disks so that they could be easily spotted. I made them attractive because I felt it was a shame to spend big money on software, put away the nice originals, and use ugly scribbled labels. From there I progressed to separating all my PD stuff by categories, one to a disk, and adding a *DeskBench* to each so everything was ready at a click."

"My friend Roy Treathaway got real excited when he saw my disks. He thought he could sell them. When I said "But they are all public domain - anyone can download them," Roy argued that I didn't realize how many people didn't have modems, the time, energy, or skill to download anything, and no idea how to un-arc or run a program from CLI." Christensen liked the idea of making good software accessible and affordable. "Now I design the disks and Roy does the marketing." The Premier Software catalog disk comes with a *DeskBench* interface and prints a complete listing and description of every program to either the screen or printer. It even prints a handy mail order form. The *Color Cycling* disk contains his animated clocks and watches, some nice variations of rain, and even a few cycling tools.

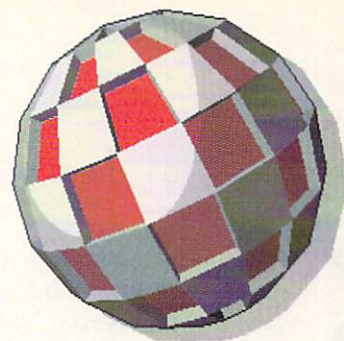
For what he laughingly calls a "change" of pace, Christensen builds intricate mechanical structures with his five sets of Tinkertoys. He shares them with friends, then tears them down. "Tinkertoys are great. They are proportioned in a mathematical progression. If you build a square from the green sticks, only the purple stick will form a perfect hypotenuse." His favorite construction was a large rotating carousel with eight horses that moved up and down.

How does this intense attention to time, mechanics, and measurement effect Christensen in the ordinary work-a-day world? He laughed at the question. "I think my fascination with clocks is because I lack the ability to grasp time. I'm a victim of time... I'm late for everything."

Premier Software
PO Box 3782
Redwood City, CA 94064
415-593-1207



CyberPlay



Incredible
★★★★★

Very Good
★★★★

Average
★★★

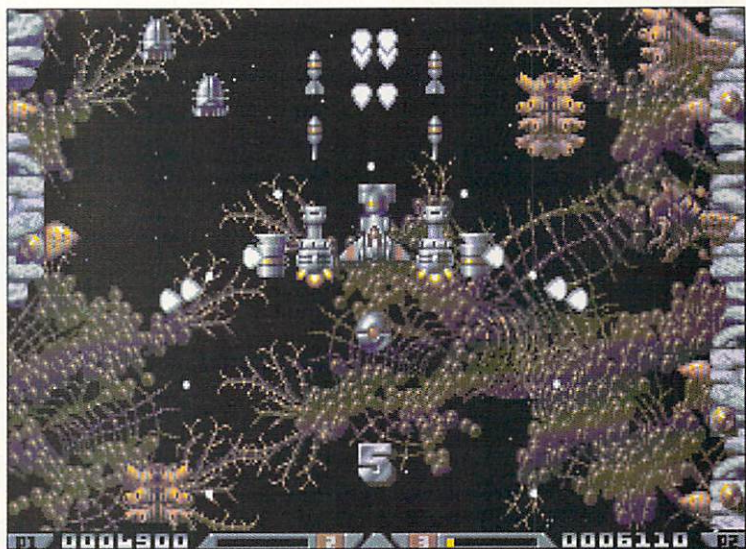
Awful
★★

Drek
★

Can you believe it?! This is a bargain package with two separate arcade games, as if *Xenon 2* wasn't a five-star game all by itself. Well, I'm here to tell you it's the best arcade alien-blast since *Menace*.

Bombuzal (★★★★) is a cute arcade strategy game that has you hopping around a tile grid detonating bombs. It offers 2D or 3D views of the board, over 120 levels, and maddeningly addictive play. It's *Xenon 2*, though, that's the star of the package. It's only a little like the first *Xenon* (though the designers have had the good humor to include a few of the original's creatures), but has more of the feel of Psygnosis' *Menace*. *Xenon 2* isn't original, nor is it innovative. It is, however, so expertly done that it's a classic of the genre. The graphics are exquisitely shaded and modeled, the animation smooth and clever, and the soundtrack good enough to bop to til you drop. The game strikes a perfect balance of being easy in the beginning and then becoming exponentially more difficult without giving the feeling that it's impossible to win. Terrific stuff and a bargain besides!

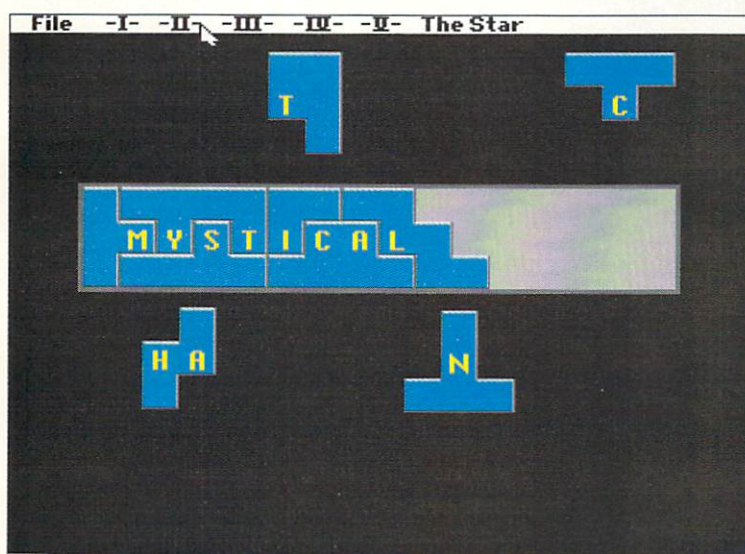
- Tom Malcom



BRAINBLASTER



Spotlight/Cinemaware, 820 Gateway Drive,
San Mateo, CA 94404, 415-571-7171



THE FOOL'S ERRAND



Miles Computing/EA, 1820 Gateway Drive,
San Mateo, CA 94404, 415-571-7171

Iwould have rated this game two full stars higher if it had been Amiga-tized in the slightest degree. (In fact, the programmers were so unskilled in writing Amiga code that the left mouse button is used to pull menus, the right button isn't used at all, and even the pointer is done in flickery software animation.) It is a perfectly wonderful entertainment, but it is a Mac/PC game, most certainly not an Amiga game. The graphics are insufferable EGA and the only sound is a tinny beeper squawk.

Despite these major complaints, *TFE* is a magnificent achievement in game design. It's a gargantuan, mammothly complex puzzle made up of anagrams, mazes, picture puzzles, word games, and even a very weird card game. Many of the puzzles defy description; the object of the game is to figure out what they are. The puzzles are all interwoven into a text story of magic and wisdom, pieces of which are revealed as you solve the puzzles.

If you can get past the IBM-itis of *The Fool's Errand*, it will engross and entertain you for weeks on end; if you can't, don't say I didn't warn you.

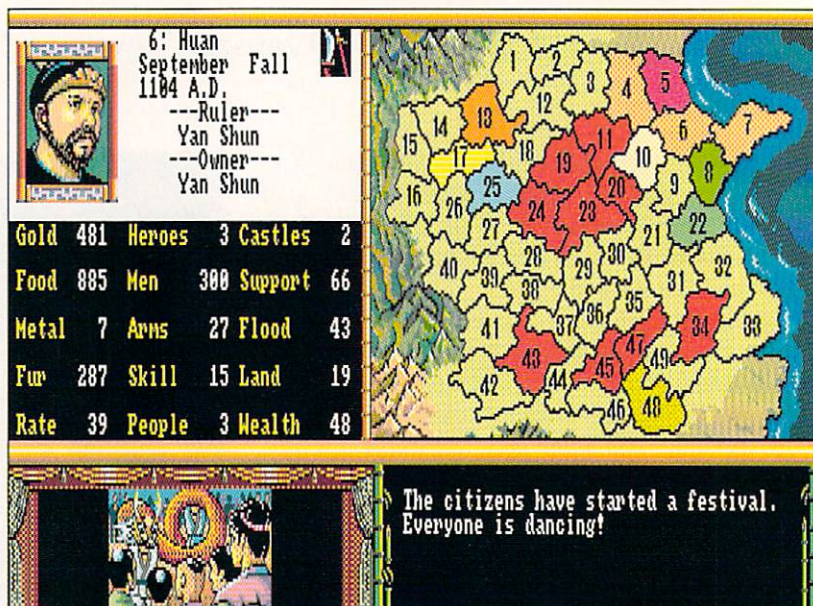
- Tom Malcom

Koei is justifiably famous for their superbly detailed historical wargames and *Bandit Kings of Ancient China* is no exception. Set in 12th Century China, *Bandit Kings* recreates a famous Chinese folk legend wherein 108 exiled heroes take up arms against the oppressive government with the twin goals of ousting the tyrannical Gao Qiu and restoring stability to the Empire.

Koei takes wargaming to new heights with super graphics and animation, highly realistic detail, and great sound, combined with a sophisticated, easy-to-use gaming system. One to seven players collaborate in playing out four separate scenarios with a cast of 255 characters - a different game every time you play.

I am generally pretty lukewarm about most wargames, but *Bandit Kings* had me enthralled and fascinated. Non-wargamers shouldn't be intimidated. The manual is well-written, easy to follow, and won't put you to sleep. Koei opens up a panoramic view of history in an area little scrutinized by Westerners. Check it out!

- Judith Kilbury-Cobb



BANDIT KINGS OF ANCIENT CHINA



Koei, One Bay Plaza, Suite 540, 350 Bayshore Highway,
Burlingame, CA 94010, 415-348-0200



THE COLONEL'S BEQUEST



Sierra, PO Box 485,
Coarsegold, CA 93614, 209-683-6858

Iwanted to fall in love with this mystery-adventure. It had everything I was looking for - intrigue, a romantic setting, well-developed characters, decent graphics, and great sound, but it's turned out to be a definite love-hate relationship.

Laura Bow, a Nancy Drew-type sleuth right down to the roots of her naturally titian blonde hair, is a roaring-twenties college co-ed invited along to attend a very strange family reunion at a secluded southern mansion. I'd like to see a lot more women-as-heroines rather than women-as-victims in adventure games, and I applaud Roberta Williams for breaking this stereotype.

Tom has carped about the lack of Amiga-tization in Sierra's otherwise highly entertaining adventures, and I have to agree. Agonizingly slow disk accesses so detract from any potential suspension of disbelief that it spoils the fun. Leaning back in your chair yawning while waiting for the location to change does nothing to encourage total involvement. If this game played even a little faster, I'd give it five stars in a minute.

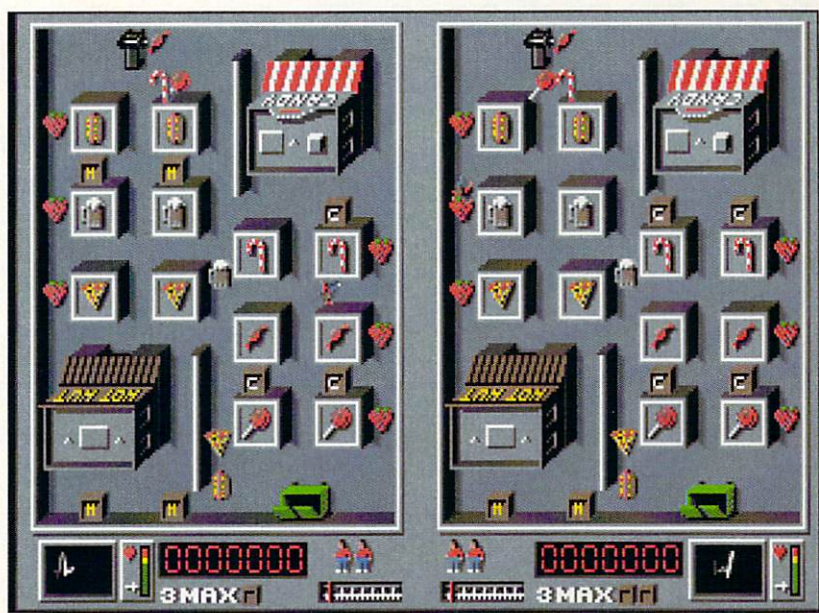
- Judith Kilbury-Cobb

Past Classics would be a more apt description of this five-game collection. There aren't any games here that you haven't seen before, though (with one exception) the interpretations are very well done. All five of them have a two-player option (human or computer), giving them a little more versatility.

The best of the lot is *Lost 'N Maze*, a dungeon maze game that has you running around picking up treasure. Movement through the mazes is smooth enough to put *Dungeon Master* to shame, though, oddly enough, there aren't any monsters. *Diskman* and *Diet Riot* (shown) are both variations on the *Pac-Man/Gauntlet* theme, and both of them are catchy enough to keep you playing. *Tankbattle* is just that. *Blockalanche* is the weakest of the collection. It's a 3D version of *Tetris* that only allows rotation of the pieces in two dimensions.

I don't often mention value in my reviews, but in this case you'll certainly get your money's worth. A good first effort from Live Studios.

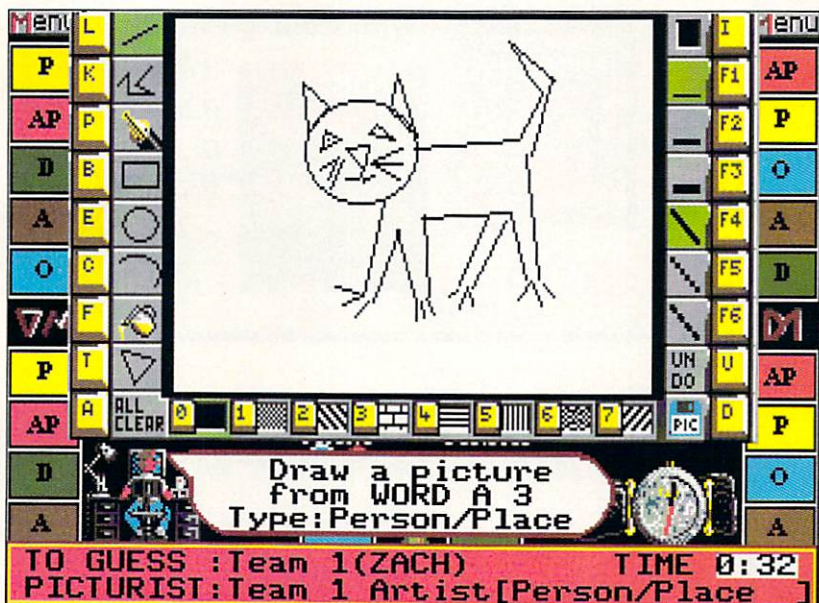
- Tom Malcom



FUTURE CLASSICS COLLECTION



Live Studios, 30151 Branding Iron Road,
San Juan Capistrano, CA 92675, 714-661-8337



PICTIONARY



Broderbund, 17 Paul Drive,
San Rafael, CA 94903, 415-492-3200

This is the lamest boardgame to computer game conversion I've seen since *Scraples*. All the fun of *Pictionary* has been painstakingly removed, leaving only an unappetizing, un-Amiga-tized, PC game of the worst sort.

In non-team play (up to 4 bored players), the computer draws the pictures, the player guesses what they are, and answers Yes or No to what the computer says the pictures represent. The answer is always Yes. In team play at least, the computer is only used for drawing and moving pieces around the board.

This version of *Pictionary* was imported from Europe, where it reportedly has been selling very well. I can't believe, though, that people play it for very long before it starts gathering dust on a shelf. Some boardgames should never be attempted in computer versions, mostly, I think, because they can't be made easier or more fun to play by computerization. *Pictionary* only seems to be fun with a mess of pencils and papers flying around the room, something this turkey can't provide.

- Tom Malcom

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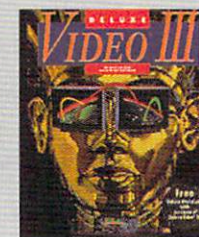
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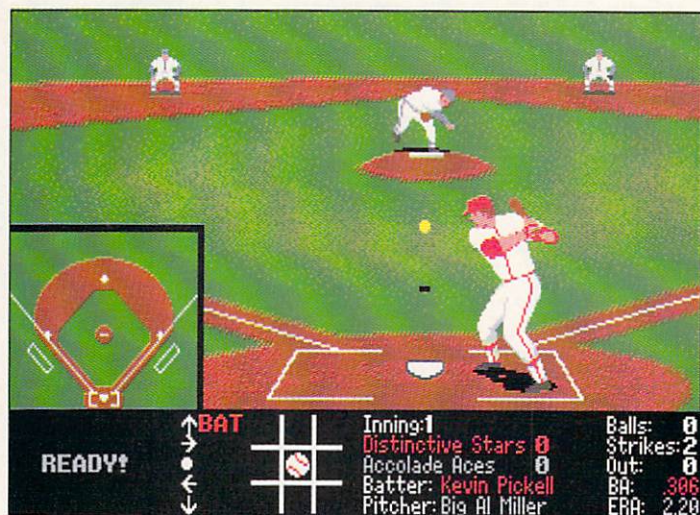
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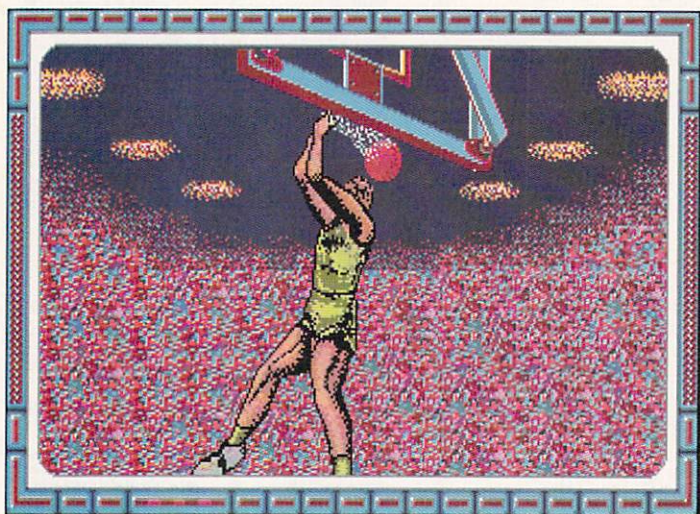
HARDBALL II



Accolade, 550 South Winchester Blvd.,
San Jose, CA 95128, 408-985-1700

I swear if this baseball game had spitting and scratching it would be the real thing. Just about any nuance of the great American pastime you can imagine can be tweaked, adjusted, and fiddled with to configure it to your liking. It will handle anything from a pick-up game to full league play with teams and stats of your own design. The game sounds just like being there, and though the graphics could stand a little more detail, they're adequate for the task. I'm not even a baseball fan and still had a good time playing *Hardball II*.

- TM



DOUBLE DRIBBLE



Konami, 900 Deerfield Parkway,
Buffalo Grove, IL 60089, 312-215-5111

This latest in Konami's ports of their cartridge games isn't bad, but there are other Amiga basketball games that are better. It gives a very good illusion of 5 on 5 play, but after a while I noticed that it's really 3 on 3; two players from each team always seem to stay at the other end of the scrolling court. The play is fast and furious, with either a human or computer opponent. Graphics and sound are fair, though I did have some trouble at first keeping track of which guy I was controlling. Solid fare, if nothing outstanding.

- TM



TREASURE TRAP

Preview

Electronic Zoo, 3431-A Benson Ave.,
Baltimore, MD 21227, 301-646-5031

A fortune in gold has been sent to the bottom of the Pacific after an explosion aboard the *Esmeralda*. *Treasure Trap* plunges you into the hostile undersea world of a deep sea treasure diver. Avoid lethal stingrays, dodge crabs, and other dangerous denizens of the deep as you explore over 100 multilevel rooms of the submerged ship. *Treasure Trap* plays a lot like *Devon Aire* and uses the same isometric plane layout. From what we've seen on the demo, the graphics, animation, and sound are all first rate. Looks like a winner.

- JKC

CONQUESTS OF CAMELOT



Sierra, PO Box 485,
Coarsegold, CA 93614, 209-683-6858

Finally, an Arthurian adventure which comes close to capturing the mythical grandeur and mystical mood of Camelot. The well-researched, witty writing is immensely entertaining. Puzzles are engrossing with several challenging arcade sequences thrown in, all rendered in colorful Sierra-esque graphics surrounded by terrific mood-setting medieval music. The game design is first rate, but *Camelot* is yet another game which suffers from Sierra-itis (see review of *Colonel's Bequest* for a recap of the symptoms.) I really liked this game. I just wish I could stand playing it long enough to finish.

- JKC



DAMOCLES



Novagen/Bethesda, 15235 Shady Grove Road,
Rockville, MD 20850, 301-926-8300

A real-time sci-fi graphic adventure, *Damocles* features exceptional solid-modeled, 3D vector graphics and lightening fast, flawless animation. The perspective constantly shifts as you change position, rather than popping abruptly from one scene to the next; it's reminiscent of *Dark Side* and *Total Eclipse*. Explore the Gamma solar system picking up clues and loot that will help you prevent the destruction of the planet Eris by the comet Damocles. I would like to see more in the way of sound effects, but I still enjoyed this one a whole lot.

- JKC



MIDWINTER

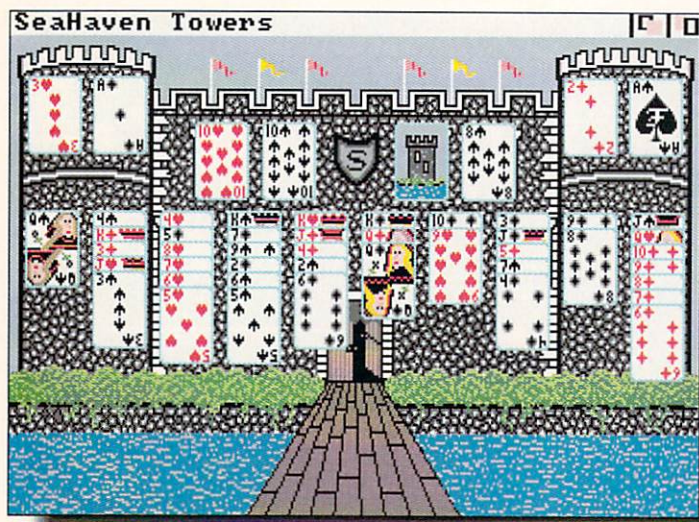


Microplay, 180 Lakefront Drive,
Hunt Valley, MD 21030, 301-771-1151

Stock up on thermal socks, another ice age is coming, or so says the premise of the arcade-adventure *Midwinter*. Defend the last habitable place on earth by strategically manipulating 32 characters and mastering arcade skills such as skiing and hang gliding. A reasonably easy-to-use icon interface controls the action. The 3D glacial landscape is fractal generated and fully light-sourced. If you can get by the arcane manual-based copy protection (which consists of identifying two characters from practically indistinguishable portraits scattered throughout the entire manual) you're in for a shivering good time.

- JKC





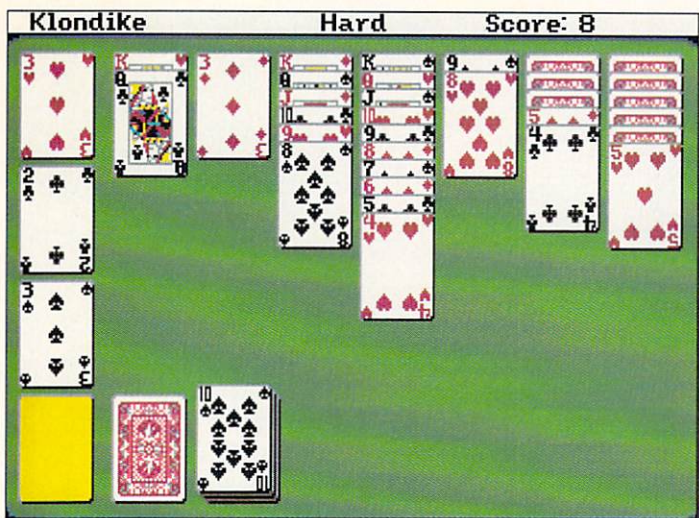
SEA HAVEN TOWERS



Unsane Creations, 205 W. El Cortez,
Columbia, MO 65203, 314-442-2468

Sea Haven Towers is a fairly addictive little solitaire card game. The game comes in two versions; a full-scale version and a stripped down variation designed to multitask easier. You can also change the rules to vary gameplay. The PD-level graphics and sound effects are well done, and gameplay is certainly absorbing, but after playing *Solitaire Royale* and *Hoyle's Book of Games*, I feel cheated. More is needed to hold your interest. Call me jaded, but I've come to expect a few bells and whistles and so, I think, have most players.

- JKC



HOYLE BOOK OF GAMES 2



Sierra, PO Box 485,
Coarsegold, CA 93614, 209-683-6858

This second volume in Sierra's series licensed from the official rule book for cards is all solitaire games. There are 28 of them, including both familiar solo diversions and some weird ones for a little variety in your time-wasting. The nice thing about playing solitaire on a computer is that it's so easy to try new games and let the machine worry about the unfamiliar layouts. As usual with Sierra games, though, the graphics and animation are straight IBM, and the play is very slow because of it. Interesting if you don't mind those flaws.

- TM



SUPER C

Preview

Konami, 900 Deerfield Parkway,
Buffalo Grove, IL 60089, 312-215-5111

An old-style shoot-em-up as only coin-op arcade games can be, *Super C* (the "C" stands for "Commando") has you as a heavily armed soldier trying to save the Earth from a nasty alien army. It looks like a pretty straight port of the arcade game, with fast action, more things shooting at you than seems humanly possible to shoot back at, and almost immediate replay after you get killed off. That last point is something too many game publishers forget these days, but Konami seems to understand well; arcade gamers are an impatient lot.

- TM

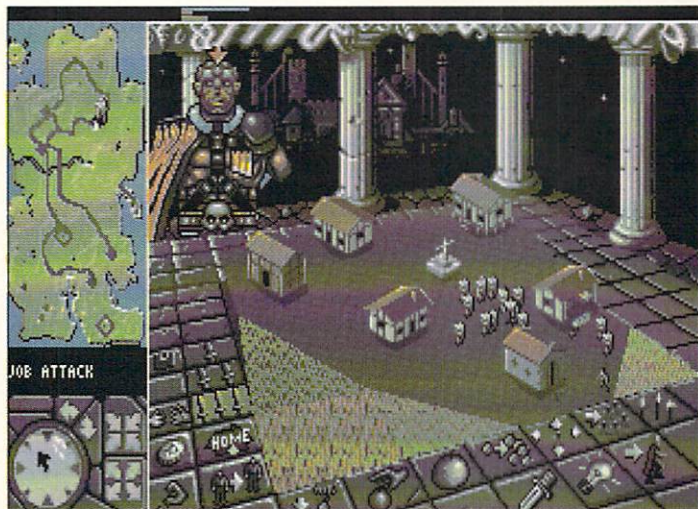
POWERMONGER

Preview

Bullfrog/EA, 1820 Gateway Drive,
San Mateo, CA 94404, 415-571-7171

Make no mistake about it, this latest creation from the inventive minds of Peter Molyneux and his merry band of programmers (the *Populous* people) is going to be the Game of the Year. The look of the game is much like *Populous*, but the icons, functions, and aim are much different, and greatly enhanced. Taking the world of *Populous* from the gods down to the affairs and conquests of men, the game casts you as a general recruiting captains and conquering territory in a setting with the feel of the early Roman empire. Look for a full review next issue.

- TM



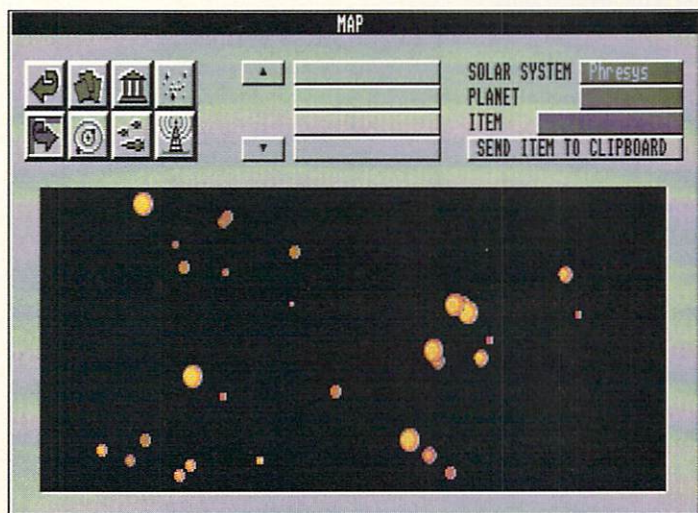
IMPERIUM

★★★★

Electronic Arts, 1820 Gateway Drive,
San Mateo, CA 94404, 415-571-7171

Imperium is one of the few strategy games that have really hooked me. The look is pure Mac, with the main screens all done in black, white, and grey (a notable exception is the animated galactic/planetary display screen), but somehow it didn't bother me, coming across as very clean-looking. There are a myriad of details to take care of and worry about in your role as the new Earth leader and intergalactic empire-builder. Play is very involved, but reasonably easy to learn, with all of the options popping open windows. Deep and rewarding if you're patient and use some imagination.

- TM



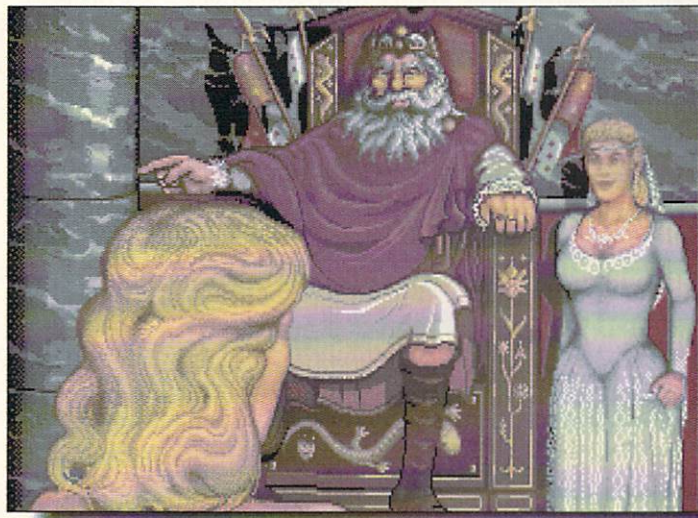
WRATH OF THE DEMON

Preview

Readysoft, 25 Red Oak Drive,
Richmond Hill, ON, Canada L4B 1B9, 416-731-4175

All I've seen of this game so far are static interlude screens, but I'm told it's a new level of achievement in game technology. It uses some esoteric programming techniques and non-standard screens to achieve more colors than standard resolutions. The game itself is a graphic adventure using multi-level parallax scrolling to give the illusion of depth (Psygnosis' *Beast* is an example of parallax scrolling), something we'll probably be seeing a lot more of in the future. The plot revolves around rescuing a princess, restoring honor to the king, and destroying a demon in the process.

- TM



COMING SOON

The following games have been announced by the game companies listed. Games that had been received in our offices at presstime have been marked with an asterisk (*).

Accolade: *Elvira, Mistress of the Dark, Strike Aces**, *Stratego*, *Ishido*, *Search for the King*, *Altered Destiny*

Bethesda: *Damocles**

Broderbund: *Pictionary**

Data East: *ABC's Monday Night Football*, *The Dream Team*, *Full Metal Planet*

DigiTek: *Dino Wars*

Disney: *Arachnophobia*, *Dick Tracy*

Electronic Arts: *Magic Fly*, *Immortal 2*, *Chuck Yeager's Advanced Flight Trainer 2.0*, *Block Racer*, *Indianapolis 500*, *DragonStrike* (SSI), *Second Front* (SSI), *Overrun* (SSI), *AD&D Pool of Radiance* (SSI), *Buck Rogers: Countdown to Doomsday* (SSI), *AD&D Curse of the Azure Bonds* (SSI), *Loom* (Lucasfilm), *The Secret of Monkey Island* (Lucasfilm), *Wings* (Cinemaware), *Nightbreed* (Ocean), *The Untouchables* (Ocean), *The Lost Patrol* (Ocean), *Billy the Kid* (Ocean), *Battle Command* (Ocean), *The Fool's Errand** (Miles Computing), *UnReal** (UbiSoft), *B.A.T.* (UbiSoft), *Powermonger* (Bullfrog), *Brainblaster Action Pak* - *Xenon II* and *Bombuzal** (Spotlight/Cinemaware)

Electronic Zoo: *Xiphos*, *Black Gold*, *Spherical*, *Berlin 1948*, *Kahlaan*, *Treasure Trap*

Innerprise: *Globulus**, *The World of Turrigan*, *Time Guardian*, *Aviators*

Interplay: *Neuromancer**, *Checkmate*

Intracorp: *Bill & Ted's Excellent Adventure*

Koei: *Bandit Kings of Ancient China**, *Nobunaga's Ambition*

Konami: *Double Dribble**, *Super C*, *Kings of the Beach*

Live Studios: *Future Classics Collection**

Mastertronic: *Wonderland*, *Spot*, *Spirit of Excalibur*

Microprose: *Midwinter**, *Red Storm Rising**, *Railroad Tycoon*

Odyssey Software: *Lunar Rescue**, *Jailbreak**, *Byteman**, *Deathbots**, *Space War**

Psygnosis: *Beast II*, *Killing Game Show**, *Tempus*, *Aqua-ventura*, *The Keep*, *Fire Stone*, *Turbo Buggies*, *Carthage*, *Planet Busters*, *Barbarian II*, *Gore*, *Awesome*, *Puggsy*

Readysoft: *Wrath of the Demon*

Sierra: *Codename: Iceman**, *The Colonel's Bequest**, *Hero's Quest**, *Conquests of Camelot**, *So You Want to Be a Hero*, *A-10 Tank Killer* (Dynamix)

Software Toolworks: *Loopz* (Mindscape)

Spectrum Holobyte: *Vette!*, *Stunt Driver*, *Flight of the Intruder*, *Tank*

Taito: *Castle Master*, *Day of the Pharaoh*, *Kiwi Kraze* (formerly titled *New Zealand Story*), *Operation Thunderbolt*, *Puzznic*

GAME TIPS

Here are some secret "side doors" and "back doors" to your favorite Amiga games. Share your "secret tricks" with .info readers! Send to: .info Mania, 705 Highway 1 West, Iowa City, IA 52246

The Plague: First, make your score end in a three (by shooting the bubbles.) Then hit **P** to pause the game, then hit **escape**, then click on 'no' when asked if you want to play again. This takes you to the title screen with the picture of the drooling barbarian with the gun. Now type in the following; *korn je ille-gaal door de plaag dan gri-jpt de jungle command je in de kraag* and then hit **return**. If you did everything right the border will turn green. Hit the fire button to return to the game and you will now have infinite lives. Be sure to do all of the above only at the first level before you have been killed even once.

- The Dolphin

Might and Magic II: To earn heaps of experience points, make a backup of your original play disk. Now boot and insert the disk that contains your characters. Save them onto your second backup by going to an inn. Buy three tickets (green, yellow, red, or black) and try to win in all three arenas. Remember to save after each victory. Once you have a victory in each arena, go to the castle where the bishop is held

captive. Before entering, flick the write-protect tab on to protect your disk. Then enter and free the bishop with the correct key. He will give you experience points if you have won three fights on the same color. Exit and go to town. Open write-protect tab and save at the inn. You can repeat this several times. Once you have acquired mega-experience save your party using your original backup of the play disk.

- Derek Godat

Savage: The password for level two is **SABATTA**.

Level three is **PORSCHE**

- Zach Meston

(Amiga Games Guide)

F/A-18 Interceptor - Not exactly a back door but a neat piece of realism, nonetheless. It is possible to 'black out' if too many G's are pulled. To do this fly straight and level at full speed and then tilt the jet sideways so that the horizon vertically divides the screen in half. Then pull back on the stick and eventually you will hear a warning tone and soon after that the screen usually blacks out for a second or two.

- Terry Russell

Archipelagos: Play the first two levels of the game. Then hit **return** and enter **8421**. Hit return again. Now you can select any Archipelago.

- Zach Meston

(Amiga Games Guide)

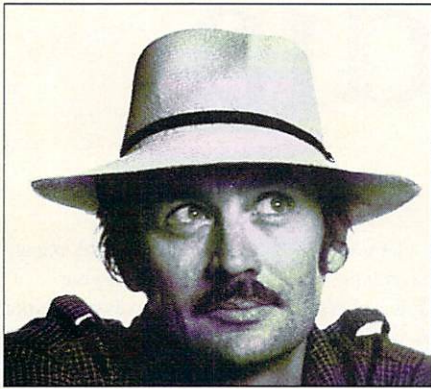


photo by Tom Ives

Quest For Sequels

The best Amiga quest of the year so far is clearly *Might and Magic II*. Chief among the array of new features is the Wizard's Eye spell, which summons up a detailed auto-mapping display that conveniently appears in a small window so you can still see the 3D picture of your current location. And those 3D pictures and accompanying spot animation are bewitchingly beautiful. True, they are the graphics from the MS/DOS version, but New World redrew them in 32 colors instead of a mere 16 for the Amiga.

M&M II is a decidedly adventurer-friendly quest. To determine the number and intensity of encounters with the 250 kinds of monsters, you can pick one of the four difficulty levels, from Inconspicuous to Thrill-seeker. If the whole party gets killed, you just punch one key to immediately restore the last saved position. You can use characters from *M&M I* or the pre-rolled party, or roll up fresh ones. It will even make use of 2 disk drives, a hard disk, and extra RAM.

The passage of time is reflected in more than just the darkening sky as night falls. Certain things happen only on corresponding days in the unique calendar, lending an authentic feel as the seasons pass and the story unfolds. Time travel even plays an important role as you travel to the Elemental Zones to stop a flood of Dragons, Orcs and other fiends from invading the land of CRON, one of adventuredom's most lushly illustrated climes. Mini-quests abound, and the end game consists of an ingenious puzzle that must be solved within a time limit.

Dungeon Master II

Following up successfully on one of the most original game designs ever is *Chaos Strikes Back*. Lord Chaos has returned, this

Shay Addams' Adventure Road



New World
Computing's
*Might &
Magic II*

time lurking in a dungeon where he threatens to destroy the Grey Lord, your mentor. Sidestepping death in four individual mazes, each based on one of the four Ways (Warrior, Ninja, Wizard, and Priest), your party must retrieve and destroy four pieces of corbum to prevent this travesty.

The game system is essentially the same as *Dungeon Master's*, as are the puzzles. Few puzzles are of the logical variety, as most involve possessing the right keys, pushing the correct buttons, and so on, and you can't actively use skills as in *Wasteland*, for example. Even so, it's still an exciting quest that is highly recommended. But play *Dungeon Master* first, since you'll do much better with characters developed in that game than with the weaklings provided in *Chaos*. (You also get a utility disk with a Picture Editor that lets you redesign your character's appearance, and a Hint Oracle offering help on many of the puzzles.)

The Only Good Orc...

If it's action you're seeking on your next jaunt down *Adventure Road*, take a side trip to Maramon in *Keys to Maramon*. Locked outside the town gates each night, you must vanquish hordes of fiends that stream from one of four towers. The battles are more reminiscent of shoot-em-up action than the complex combat of a typical role-playing game,

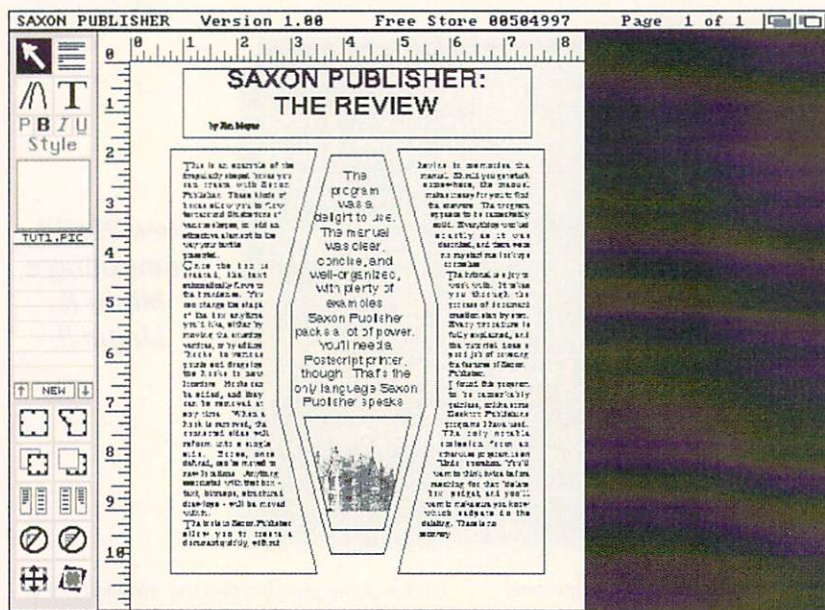
but the game goes beyond the simplicity of a *Gauntlet*. If you don't slay every single monster, a degree of damage is done to the town - and because your sole character is supposed to be defending the town, the people won't be helpful when you try to buy weapons, food and information.

Any Day Now

SSI's Amiga version of *Silver Blades*, their latest in the AD&D series should be out soon. And they're going after the science fiction audience with *Buck Rogers: Countdown to Doomsday*, which will use the same game system. Origin now projects the Amiga *Ultima VI* as a spring release (which probably means summer). They'll follow it with *Savage Empire*, which will use an enhanced version of the *Ultima VI* game system for a "Doc Savage in the Amazon" type adventure.

Shay Addams, "the world's foremost expert on adventure gaming™," is the publisher of the excellent gaming newsletter *Questbusters* (\$18/yr., \$24 Canada, \$32 Int'l., PO Box 5845, Tucson, AZ 85703). He also owns more computers than you can shake a stick at, so he may occasionally mention a game he has played on the Macintosh (Retch!) or even on an MS/DOS computer (Vomit!)

Jim Meyer on Multimedia



Saxon Publisher allows odd-shaped graphics and text windows.

What's a pricey package like *Saxon Publisher* doing in the Amiga market? For one thing, it's promising to "set new standards in the art of desktop publishing." Does it? I spent some time with it recently, and came away impressed.

THE TOOLS

Working with *Saxon Publisher* is straightforward. You create a page, give it certain definitions, and add some boxes to it. You duplicate this process for each page, giving each box you create whatever attributes it needs. Once you're done with the overall layout, you put your text and graphics into the boxes. You then add whatever touch-up or customizing details you need. Simple, right? Right. Behind that simplicity, however, lies a lot of complexity, and therein lies the true power of *Saxon Publisher*. When you fire up *Saxon Publisher*, you are greeted with a vertical row of gadgets on the left, a title bar, and a large blank area. The placement of the gadget bar, opposite of where most programs have it, feels natural once you start working with the program. Your first task will be to create a page. You can choose from the standard pages - letter, legal, business card, A3 or A4 - or you can enter your own page dimensions. Once you've

made your selection, you'll be staring at a blank page. The two box-creation tools should now grab your attention. One tool creates rectangular boxes, while the other allows you to create a polygon of any shape. The boxes you create will become home to your text and graphics, and they will define how your material appears on the page. Each box has its own attributes, which are set through the box requester. They include: permeability, transparency, margins, baseline elevation, forward slant, x-axis scale, y-axis scale, and texture. Let's take these one at a time: Permeability affects the way text flows around a given box. Text will flow around an impermeable box, but will flow through a permeable one. You might wish to have a box which is both permeable, allowing text to appear under it, and transparent, so that you can see that text. The Margins setting lets you determine how close text will come to the top, bottom, right, and left sides of the box. The baseline elevation and forward slant settings let you rotate a box clockwise, counter-clockwise, forward (toward you), or backward. The scaling gadgets let you alter the width or height of your text, compressing (or expanding) it in either direction. You may also "flip" the contents of a box (giving you a mirror or upside-down image) by entering a negative value for this setting. The Texture setting in *Saxon Publisher* is intriguing. With it, you can give boxes certain qualities, such as drop shadows, or textures, among them StoneBrick, RadialBottom, and various fades. (Actually, all of the currently available textures are different kinds of fades, or variations on shading. *Saxon Industries* promises to expand Texture in the near future with a variety of bitmapped patterns.) The texture you choose can be solid, transparent, or bitmapped. According to the technical notes, *Saxon Publisher* is capable of rendering 262,144 different color hues. Without color Postscript capability, you will be limited to grey-scale representation. Even so, you can use Texture to add an extra element of visual appeal to your page. Everything in *Saxon Publisher* can have texture, from pages to boxes to type.

PAGE LAYOUT

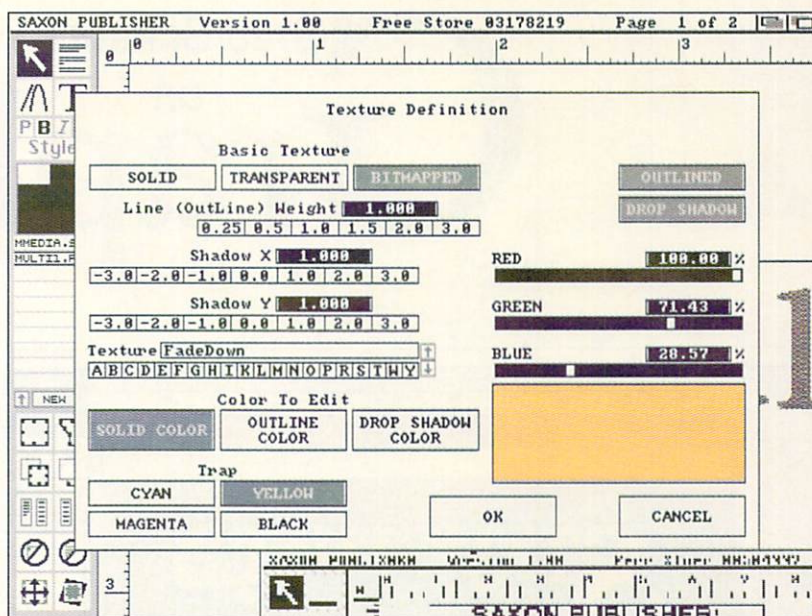
Saxon Publisher, while called a desktop publishing program, is primarily a tool for page layout. You can make best use of *Saxon Publisher*, as well as other page layout programs, by creating your text on a wordprocessor. *Saxon Publisher* recognizes this and allows you to import four different kinds of text: Generic with or without carriage returns or line feeds, and *WordPerfect*. When you import a *WordPerfect*

It's November,
and Jim Meyer
joins us as our
Multimedia and
Desktop
Publishing
columnist.
He starts out
with a look at
Saxon Publisher.

document, *Saxon Publisher* will retain certain text attributes: bold, italics, underline, superscript, and subscript. Generally, you will want to flow text into your document after you have finished laying out the pages and boxes. One of the gadgets on the left contains the names of all the documents and graphics you have loaded. To flow text or graphics into a box, you simply make a box active by clicking into it and click on the name of your document. It will automatically flow into the box you have made active, fitting itself to the shape of your box. If you have more text than box, you can continue to flow your document into another box by repeating the procedure. The text will resume at the point it left off. When you flow graphics into a box, you can have the graphic sized so that it is centered, with its boundaries falling on the outermost hooks of a box. Once you have your text on the page, you can stylize it. Stylizing the text can mean any of a number of things. In *Saxon Publisher*, you work with tags - style tags and text tags. Style tags apply to type styles. When you select a type style, you are tagging a particular kind of text and selecting all of the parameters that go with it, from typeface and size to tracking, leading, texture, and justification. You can specify any number of type styles, each with its own unique attributes. For example: one type style might be reserved for body text - 12 point Times, justified flush with the left and right margins, and with dropcaps. Within that one typestyle, you can set different definitions for normal text, the first letter of a paragraph, capital letters, and two special fonts. This approach gives you an incredible amount of flexibility in the layout of your document. Once you set the attributes of a type style, all of the elements become automatic. Let's say you have decided that the first letter of each paragraph should have a Palatino typeface, and should be 18 points. The program will automatically adjust each first paragraph letter accordingly. Want capital letters to be Helvetica? 12 points? No problem. All you have to do is set up your type styles the way you want, name them, and then use the paragraph tool to transfer a particular style to a portion of your text.

POSTSCRIPT ONLY

Saxon Publisher prints only to Postscript or Linotronic printers and comes with no printer fonts. It will use whatever fonts are resident in your printer, and does support downloadable Adobe fonts. Saxon Industries has announced plans to introduce a number of downloadable font packages. The screen fonts that *Saxon Publisher* uses come in two varieties: bitmapped and outline. Normally, you would use the default bitmap fonts for on-screen representations. The quality of these fonts leaves something to be desired, however. When you need a more accurate representation of your text, you can choose "HQ Text." This option uses a proprietary outline font technology to render the text. It takes considerably more time to render text this way, so you'll want to use this option sparingly. Once you're ready to print, you can choose a device on the serial or parallel port, or you can print



Saxon Publisher's texture requester.

to disk. Folks without Postscript printers will appreciate the last option. If you have a Postscript printing service nearby, you can bring them the Postscript file on disk or transmit it via modem. The Postscript output can be color or monochrome, or a four-color separation, and can be scaled larger or smaller. The HQ bitmap option allows you to double or quadruple the resolution of IFF bitmaps.

EVALUATION

Overall, *Saxon Publisher* is a rock-solid product that is both easy to learn and easy to use. Although it uses a lot of memory - over one megabyte just to run - it multitasks well. Most of this review was written while *Saxon Publisher* was running in the background. The manual is a pleasure to read. It is carefully laid out, well indexed, clear, and has lots of examples and illustrations. The on-disk tutorial does a good job of guiding the user through most of the program's features. Not once did the program do something unexpected, and not once did it crash. The only complaints I have about *Saxon Publisher* are its annoying tendency to redraw the screen every time you switch modes, and its lack of an undo feature. I didn't mind the fact that *Saxon Publisher* only supports Postscript devices, given the availability of printing services. (One other option worth exploring is the shareware Postscript interpreter, *Post*.) Is *Saxon Publisher* worth the price? That's between you and your wallet. What you'll get for your money is a well-designed program that not only doesn't get in your way, but helps you get the job done.

This article was desktop published using *Saxon Publisher*, but in keeping with the look of other articles, we missed showing the programs more spectacular features.

★

Saxon Publisher

\$450.00

Saxon Industries

14 Rockcross

Gardens,

Nepean, ON

Canada

K2G 5A8

613-228-8043

Brad Schenck on Graphics

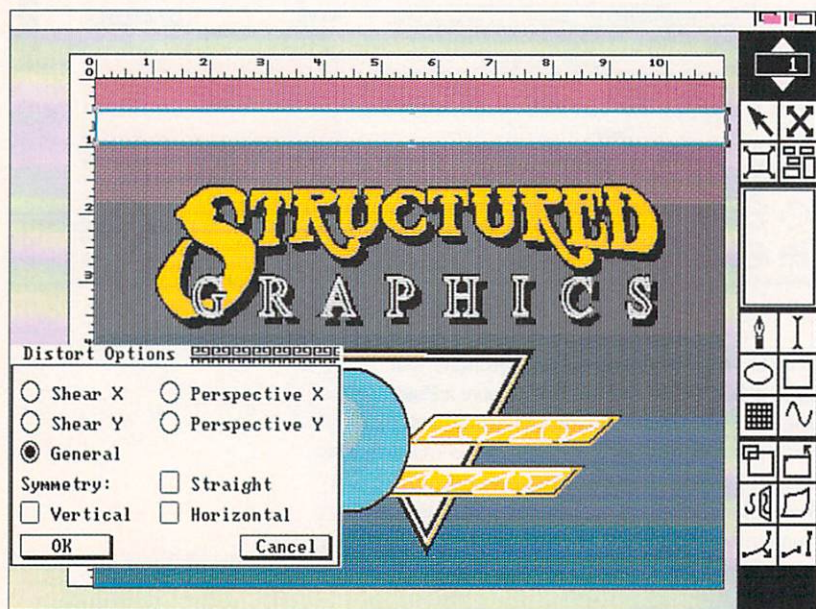


Figure 1. One of the color dithering modes used to simulate the colors in a *Professional Draw 2.0* folio (document) or clip.

.info's resident
Graphics Guru
Brad Schenck
examines
Gold Disk's
much-improved
structured
drawing
program
*Professional
Draw 2.0.*

No matter how good bitmapped paint programs like *Deluxe Paint* and others may be, painting with pixels remains as much like building a mosaic as it is like painting. The individual squares of color in a bitmap can be disguised, but they are always a blocky reality.

Structured graphics are one answer to this problem. Just as a desktop publishing program produces a document printed at the highest resolution of the printer, a structured graphics program can produce drawings as clean and jaggie-free as the output device will allow. That output device might be a Postscript laser printer, a Linotronic typesetter, or a film recorder. In each case, a structured drawing can be 'redrawn' by the device in resolutions of 2500 lines to the inch or more.

The upshot of this is that you can draw lines, curves, and color fills within the drawing program that appear as smooth on screen as possible, but appear much smoother when reproduced on paper or film.

Mostly, structured graphics are useful in desktop publishing applications. Another use is for creating slides to be used in presentation graphics and other applications, which is where the film recorders come in.

Gold Disk's *Professional Draw* is still the only

structured drawing program available for the Amiga. Users of the original release were often frustrated by its slow redraws and limited features. Gold Disk has tried to address these frustrations in version 2.0.

The Program

The main screen for *Professional Draw 2.0* looks very much like the original, which in turn resembled *Professional Page*. Several of the important tools are available in the tool panel via icons. It's a bit difficult to get to know the interface until you've worked with it for a while, since the icons aren't always very obvious about their functions; but once you know your way around, things become simpler.

Professional Draw's new features include the ability to align text with curves, some new forms of 'warping' or distorting shapes with perspective and other effects, color blending, and onscreen dithered colors.

Users of the original *Professional Draw* will feel right at home. They'll also be happy to find that the redraw time has been drastically decreased, even in the three color dithering modes, though screen operations are even quicker when the page is viewed in wireframe. But the program unfortunately seems to redraw when it doesn't need to: if you add a color to the palette, for example, the screen will redraw even though that color doesn't appear anywhere on the page. I occasionally had the same feeling I have when I'm driving behind a motor home on the California freeways - no way around it, and it seems to slow down at random.

The manual is sketchy, and its index is far from complete. The tutorials do serve to get you started with the program, even though many details have to be worked out through trial and error.

As in *Professional Page*, Compugraphic fonts are supported. These can even be aligned with curves and converted to graphic objects. Any of the other tools can be applied to the text, including distortion effects (very handy for logos). When aligning text with curves, one can set options that control rotation, scale, and spacing.

While color blending is a welcome addition, the way it's implemented is a trifle bizarre. You must create two objects with two different colors, select them, and set the number of steps *Professional Draw* will create between them. *Pro Draw* automatically creates the intermediate colors and shapes, effectively 'morphing' between the two objects. There are good

controls over the size of the blend shapes, so that several different effects can be created. However, since *Pro Draw* is 'morphing' shapes, this feature doesn't work very well on complex forms. Making simple backdrop blends, or highlights on circular objects (as shown) is very easy; but if you try to use this feature to create a smooth fill from a highlight to a complex outline, the intermediate shapes create effects that are *not* what you were looking for. It's necessary to make a highlight and with a larger object around the highlight, then blend between them; this isn't much simpler or more effective than doing the whole job by hand. What would be much more useful would be a gradient fill of the type we have in bitmapped graphics packages. In that case you could designate a hot spot and have a blended fill run out to the object's edges.

One apparently undocumented side of the Blend function is that although normal *Pro Draw* palettes are restricted to 127 colors, any number of colors can be used in a Blend with no effect on the rest of the available colors.

The Trace Program

Supplied with *Pro Draw* is an Autotrace program for generating structured graphics from bitmapped images. With a little common sense, this utility works very well. It can create either simple one-color shapes or layered shapes in several colors, making separate objects for each color area in the picture.

Highly dithered pictures, like raw digitized images, are a bad choice for tracing. Remember that Trace is making a separate object for each area of color - an image with isolated pixels of many colors would turn into a complex group of objects, many of them representing single pixels. For best results, use IFF images with large, flat areas of color, or process your digitized originals to simplify them. Highlights and shading can be re-created within *Pro Draw*.

I had very good results with the Trace program; I only wish that I had been able to translate these *Pro Draw* clips into 3D objects for use in modelling software like *Turbo Silver*. Synthesis' *InterFont* includes a *Pro Draw* converter, but as yet it's write-only. This means that, while it can create *Pro Draw* clips, it's unable to read them and translate them to other formats.

There is one possible problem when using the Trace program. Graphic objects in Postscript can't have more than 1500 points, but the Trace program will cheerfully create objects that exceed that limit - and *Pro Draw* will likewise display them on the screen. These objects won't be printed, though. To get around this, use the 'split' tool to divide a complex object into sections. This isn't completely bulletproof, and I hope that future revisions of the Trace utility will automatically detect objects that exceed the point limit and subdivide them where needed.

Compatibility

Version 1.3 of *Professional Page* has a problem with Blends from the new *Pro Draw*. The 'extra'

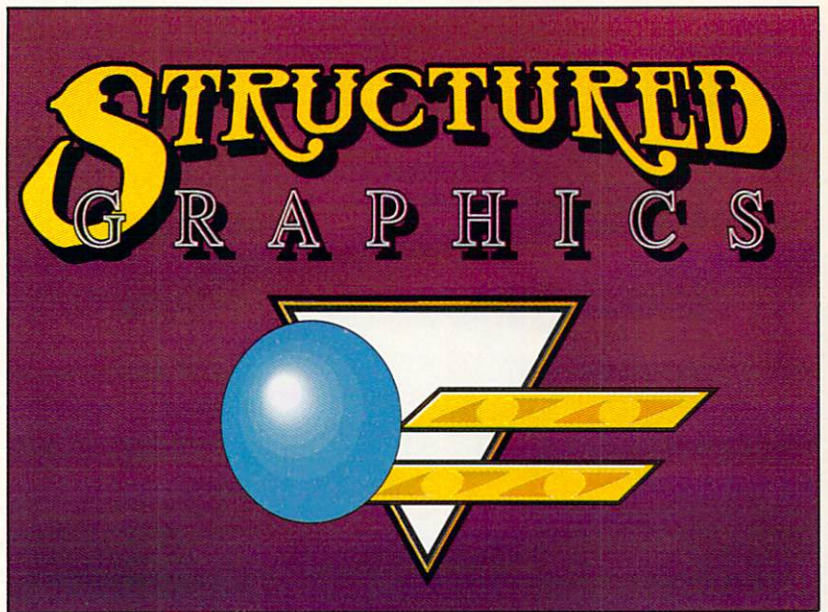


Figure 2. The colors and blends in this 1200-line Postscript typesetter output look a bit different than they did on-screen. The backdrop blend uses 80 steps between two colors.

blend colors don't appear in a 1.3 document, and are reduced to the original source colors for the blend. There's a *Pro Page* 1.31 update that does handle the blend colors properly.

I had another problem when importing my clips into *Pro Page*. After saving out a document that used a clip, any modification to that file would result in a corrupted *Pro Page* file when saved out again. That forced me to do all my work in *Pro Page* in one sitting when clips were involved - hardly the kind of advantage one looks for in computerized layout. This was a recurring and serious problem that needs a quick solution. (Gold Disk, when asked about this, said that it was under investigation; a recommended work-around is to use the 'Save As' rather than the 'Save' function.)

Summing Up

Scanty documentation and a few 'halfway there' features kept me from falling in love with this program, but there are some other points to consider. Because the Amiga market has always wanted powerful tools at low prices, Amiga developers are engaged in a constant struggle between the quality of their products and the need to get a fair return for their development time. *Pro Draw* weighs in at perhaps half the price of similar programs on the Macintosh and MS/DOS systems, and viewed in that light it's quite a bargain.

Gold Disk has constantly upgraded its desktop publishing software. Both *Pro Page* and *Pro Draw* have come a long way since their initial releases, and the company shows no sign of halting its improvements now, so we can foresee continual improvement for these programs in the future.

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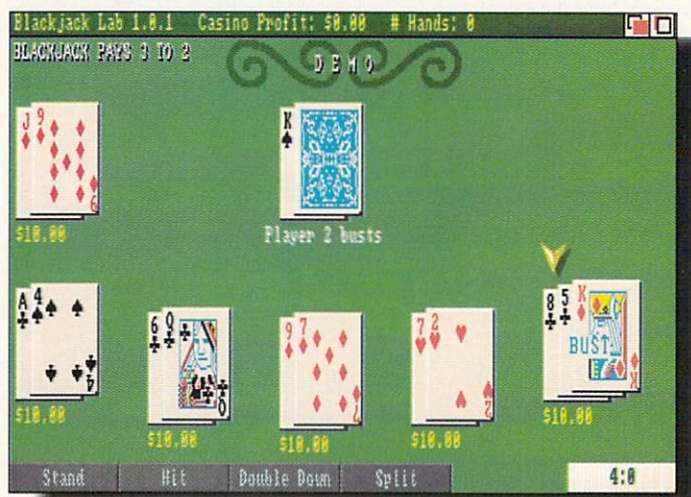
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PUBLIC DOMAIN



The programs discussed here are all available from free sources such as local BBS services and user group public domain software libraries. However, our columnists acquired them through one of three commercial sources: the online communications services GEnie and American People/Link or commercial public domain software collections (see listings). For further information, contact these sources directly.

AMERICAN PEOPLE/LINK

The Amiga Zone and The Amiga Zone Pro are American People/Link's Amiga support sections. Each file's access number is tagged with either "AZ" or "AZPRO" to indicate which section it can be found in. (For information on signing up for People/Link, call 800-524-0100.)

BLACKJACKLAB101.LZH [23,515/AZ]

Blackjack Lab (left) by Dan Coglian is to cards what *LVCraps* (INFO #29) was to dice: perhaps the best computer simulation of the game ever released. Features include the facilities to simulate nearly any casino blackjack game in the world, basic and card-counting strategies, statistics tracking, hints, coaching, and interactive online help. *BlackJack Lab* can handle from one to seven players with the computer playing any or all of the hands. Digitized sound and card dealing animation enhance the experience, and *Blackjack Lab* is fully multitasking, memory permitting.

MANDELMTNS20.LZH [23,627/AZ]

MandelMountains (left) lets you render wonderful three-dimensional images of blow-ups of the Mandelbrot Set. The well-known color strips of the usual Mandelbrot images become at once mountainsides that smoothly climb to high plateaus, leaving deep valleys between them. This new, improved version adds the Julia Set, double precision math, the great *PathMaster* file requester, and other improvements. Check out the sample picture on this page!

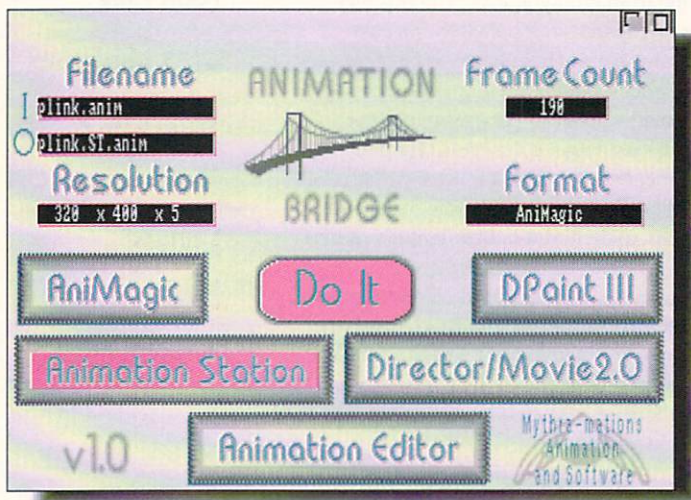
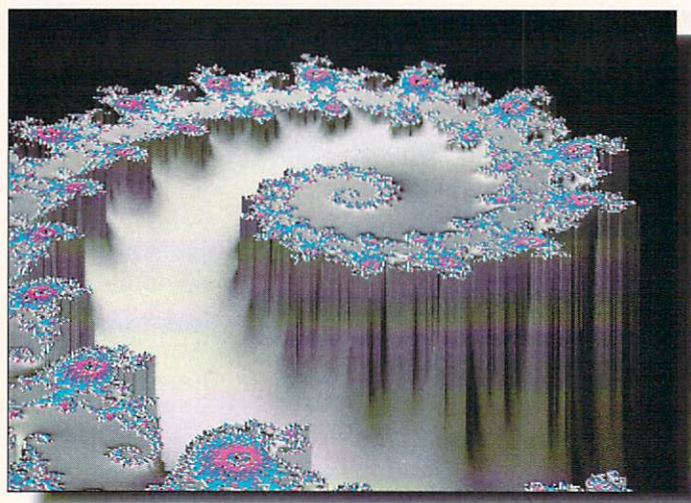
ABRIDGE.LZH [23,633/AZ]

ABridge (left) is an interim solution to ANIM-5 incompatibility problems. It identifies the origin of an ANIM-5 file and modifies it to permit exchange among *AniMagic*, *VideoScape 3D*, *Animation Station*, *Deluxe Paint III*, *Animation:Editor*(v1.11), *The Director*, *Sculpt-Animate 4D*, *Movie2.0*, *Photon Paint 2.0*, and *Cel Animator*. It sports a fully Intuitionized interface, and includes full ARExx support including a "Find ARExx" option if you start ARExx after running *ABridge*. If you work with many different animation creating programs, this one is a must-have!

PLAYMASTER.LZH [23,684/AZ]

PlayMaster will play 36 of your favorite sound files from your Amiga keyboard. Sounds load to fast RAM if available, and move to chip memory to play.

- Harv Laser [CBM*HARV]



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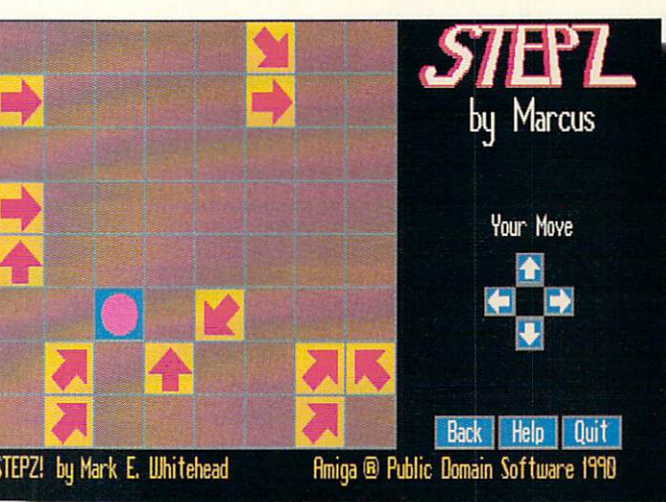
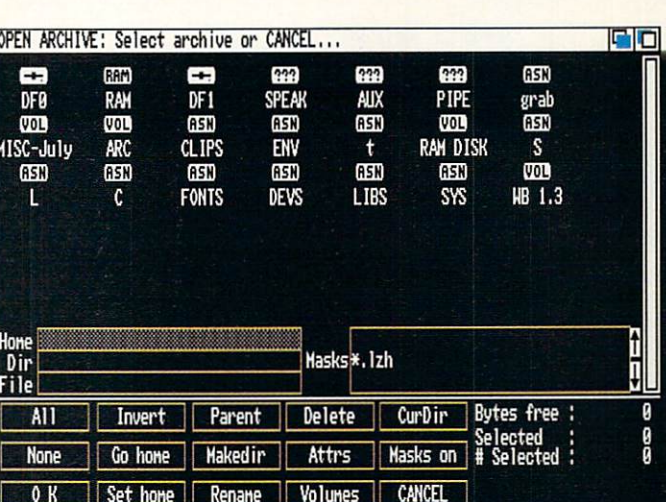
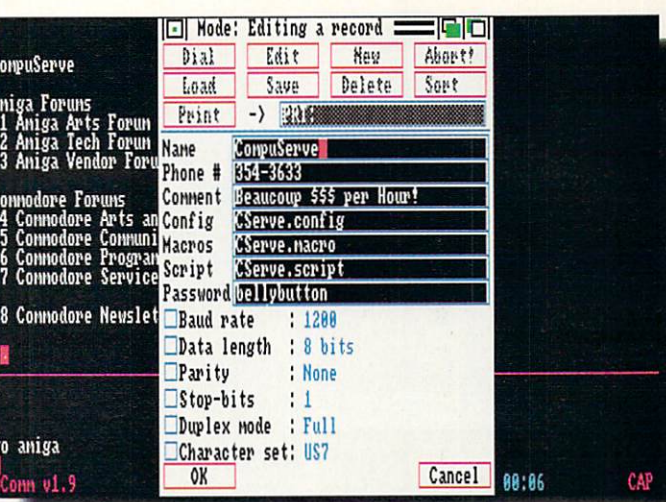
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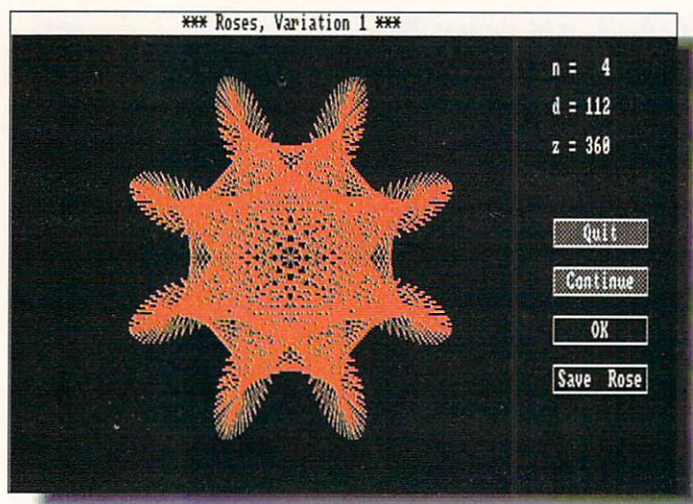
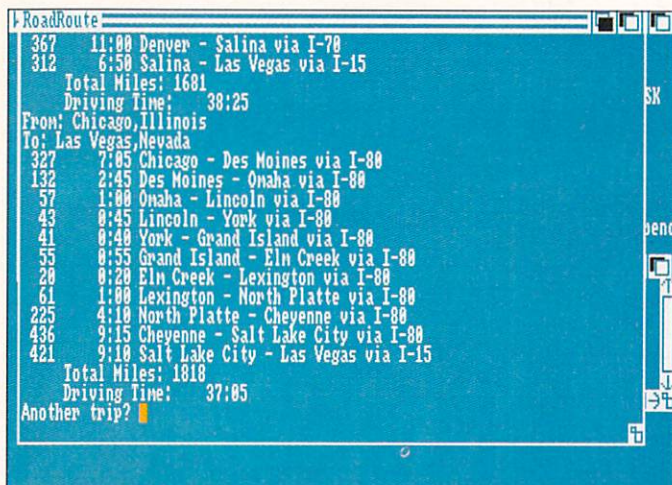
cleanups and bug

Z. J. ZH [8337]

gamesters.



PUBLIC DOMAIN



DISK COLLECTIONS

The Fred Fish Library

One of the problems in reviewing public domain and shareware programs is the multiplicity of distributors. But if you trace these programs back to their source, you will find that it's Fred Fish from whom (almost) all blessings flow. A great many PD and shareware programs have historically appeared on Fred's disks first, which is why over 370 Fish Disks have appeared to date. Here's a quick look at a few relatively recent releases.

FISH DISK #328

RoadRoute (left), authored by Commodore Guru Jim Butterfield, assists you in routing your travels across the US by providing valuable information about distances, routes, and travel times. It allows you to add destinations and roads, and users Fred Mayes and Gary Delzer have added their expanded data in this release. Useful if you travel frequently by car. Now if we only had an Amiga laptop... FF328 also contains some disk utilities by Australian Chris Hames, and a release of the PD spreadsheet **AnalytiCalc** by Glenn and Mary Everhart.

FISH DISK #345

Roses (left) by Carmen Artino allows fast, simple generation of sine roses, which graphic representations of the polar equation $r = \sin(n \cdot d)$, it says here. Roses makes interesting art, and the result can be saved to disk. Also on FF345: several interesting utilities, and an educational game called **CRobots** which helps you learn the C language by programming battling robots.

FISH DISK #350

On this disk is an excellent IFF picture-to-stitchery pattern conversion program created by *.info* columnist and Amiga artist Brad Schenck. It's a wonderful example of how you don't have to use 'C' to write great Amiga applications - **Stitchery** (left) was created using *The Director*, from The Right Answers Group. If you're into needlework, this program is a must-have! Also on FF350: a library of interesting icons, and **MemMometer**, which displays allocated memory like a disk "gas gauge," on the left of your screen.

HOW TO ORDER

Fish Disks are widely available, but here are two sources, including the Master himself:

Fred Fish, Amiga Library Disks, 1835 East Belmont Drive, Tempe, AZ 85284

1-9 Disks \$6.00 each, 10-49 = \$5.00, 50-99 = \$4.00, 100+ = \$3.00.

Complete library \$2.00 each including First Class mail.

Fish To Go, COMAL Users Group USA, Ltd, 5501 Groveland Terrace, Madison, WI 53716

Any quantity \$1.95 each, including UPS shipping in USA. MC/Visa accepted, no phone calls. Library subscriptions are available. For a limited time, if you mention you are an *.info* reader you will receive a free demo disk (their choice) with each order.

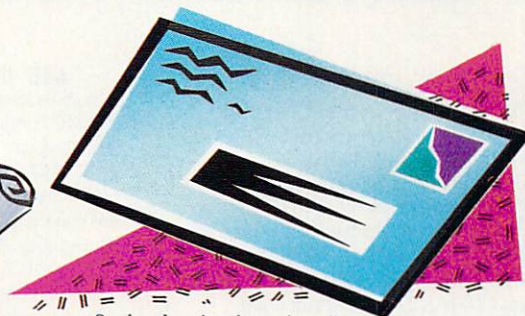
-Jeff Lowenthal

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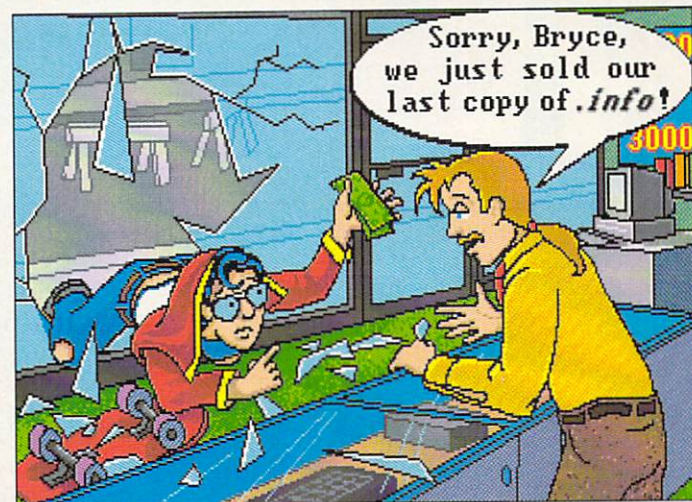
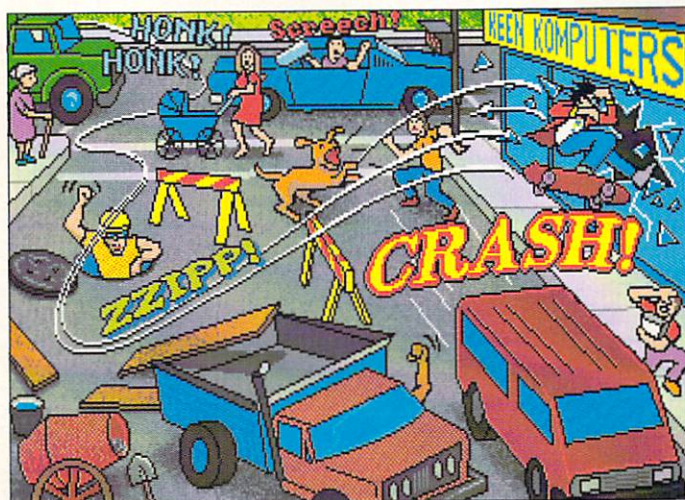
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3D & Animation

John Foust
on



Figure 1. *3D Professional* offers many classical textbook methods of rendering, as shown in these images.

This month,
John reports
from the Chicago
AmiEXPO, and
delivers an
overview of
Caligari and
Forms in Flight,
as well as three
more new
programs.

Last month's column mentioned the long-awaited 3D program from Progressive Peripherals and Software called *3D Professional*. So far, it's made a big splash. *3D Professional* touches all the bases of textbook rendering techniques. Other Amiga programs have avoided the well-known names that describe rendering techniques. I can imagine using *3D Professional* with a graphics textbook in one hand, and the mouse in the other. It offers Gouraud and Phong shading, full and scanline Z buffering, plus several dithering methods to gain more colors in non-HAM modes. There are lots of settings to control other classical parameters of rendering, such as backface removal, opacity, transparency, etc. - everything short of true raytracing. However, raytracing may be available as an add-on in the future.

But *3D Pro's* box is the first thing that impressed me. It's about one foot by one foot by six inches deep, with four-color printing, a faux-marble background, and gold foil highlights. Big splash indeed, if only from sheer size and color. There's a lot of text on the back and sides explaining what the program can do. If I went to my local dealer to get a 3D program, checkbook in hand, and saw this package on the shelf next to the relatively boring boxes of the other 3D programs, I might be tempted to buy *3D Professional* simply on the basis

of the package. Priced at \$495, the box encloses a tutorial videotape, two manuals, a quick reference guide, plus all of *Animation Station*, a storyboard-based ANIM animation editing system. There's so much to cover, it could easily encompass an entire column.

[A quick aside: As I explained last month, in this column I will occasionally share some of my hard-earned experiences at Syndesis, my software company. This month's nugget relates to packaging. We recently improved our packaging for *InterFont*, and sales improved dramatically. Packaging matters not only to impulse-buying consumers, but to distributors and dealers, too. Apple's marketing squads have set the standard for what "computer professional" looks like. You know the look - slightly tall, airy text on a crisp white background. If the Amiga is going to compete against the Mac, we need "professional" packaging, too, for both the Amiga and its products.]

Caligari

There are four versions of *Caligari*: At the low end, there's the \$249 consumer version that includes the modeler and a simple rendering engine. It's followed by *Caligari Professional Design* at \$795, which is similar to the consumer version except it requires a 68020 machine. It has no animation abilities. *Professional Design's* big brother is *Caligari Professional* at \$1995, which adds animation. Finally, at the top end is *Caligari Broadcast*, which requires a 68020, a BridgeBoard, and a Targa display board on the PC side of an Amiga 2000 or 3000, at \$3495 - hardware not included. *Caligari Broadcast* uses a more sophisticated renderer called *Rendition*, which is actually a third-party product available for the IBM PC and high-end workstations. They ported their program to the Amiga, so in *Caligari*, the images are rendered on the Amiga side, and the BridgeBoard is only used for displaying the final image on the Targa board.

One common question about *Caligari* involves file compatibility. The consumer *Caligari* has a slightly different file format than the other packages. The high-end programs can load it, but you can't load high-end objects into the consumer package.

Forms in Flight

Forms In Flight version 1.0 was discontinued with the release of version 2.0. Developer Micro Magic licensed it to Centaur Software. Programmer David Youlton's parting words to the Amiga community: "Buy *Forms In Flight* from Frank Khulusi. He's a great guy." According to Youlton, Creative stopped advertising

Forms In Flight several months ago, and the potential for any update looks slim.

Why do I bother mentioning a product that's gasping for breath? Because there are still many avid users of *Forms In Flight* version 1.0. They use it for one solitary feature found in no other Amiga 3D program: plotting. *Forms In Flight* can plot a wireframe view of a 3D scene with all hidden lines removed. In other words, the plotted output looks more like an artist's pen-and-ink rendering than something generated by computer. It's not bitmaps, it's not video, it's pure strokes on paper.

Lightwave

The *Video Toaster*'s 3D animation program has a name: *LightWave*. NewTek demonstrated it at the Chicago AmiEXPO in early July. Designer Allen Hastings showed how it builds an animation sequence, giving overhead and camera viewpoints in wireframe. *LightWave* includes an object builder and a large collection of pre-made objects. Because it's designed for the *Toaster* (and is included in the box with it), it isn't going to render images to anything else.

Two other interesting new 3D-related products made their debut in Chicago. *Pixel 3D* from Axiom Software traces bitmapped images, saving outlines in *Sculpt*, *Turbo Silver* and *VideoScape* formats. It can also extrude those outlines, and automatically fills them with triangles. It sells for \$89.95, and you can reach Axiom at 507-289-8677.

Journeyman

By the time you read this, Hash Enterprises will have released *Animation: Journeyman*. They were one of the stars of Commodore's booth at SIGGRAPH in Dallas in early August. They've taken their *Animation: Apprentice* product one step beyond fabulous, judging from pre-appearance details. At the SIGGRAPH graphics show, they demonstrated the way *Journeyman* can render and record frames to an optical disk recorder. It will ship at a \$500 list price, available only from Hash Enterprises. *Apprentice* owners can upgrade for \$100.

Like *Apprentice*, *Journeyman* is broken into modules. The choreography module lets you describe absolute motion in scenes (that is, where an object moves), the action module describes the relative motion of objects (such as the way arms and legs move, while walking), and modeling and character modules are for building objects and setting their colors.

Motions are described with a system called channels, copied from high-end Wavefront and Alias systems. Objects are composed of cubic spline patches, not polygons. Think of them as rubber sheets. Like *Deluxe Paint*, you can hit the 'j' key to jump to a paint program for making bitmap images that wrap to an object as a decal. There's even a way to draw front, top, and side views of an object in the bitmap editor and convert it to a spline-based object.

Disk Animation

On the animation front, IVS showed a new hard disk controller that's fast enough to play video from hard disk, with digitized sound, at about 10 frames per sec-

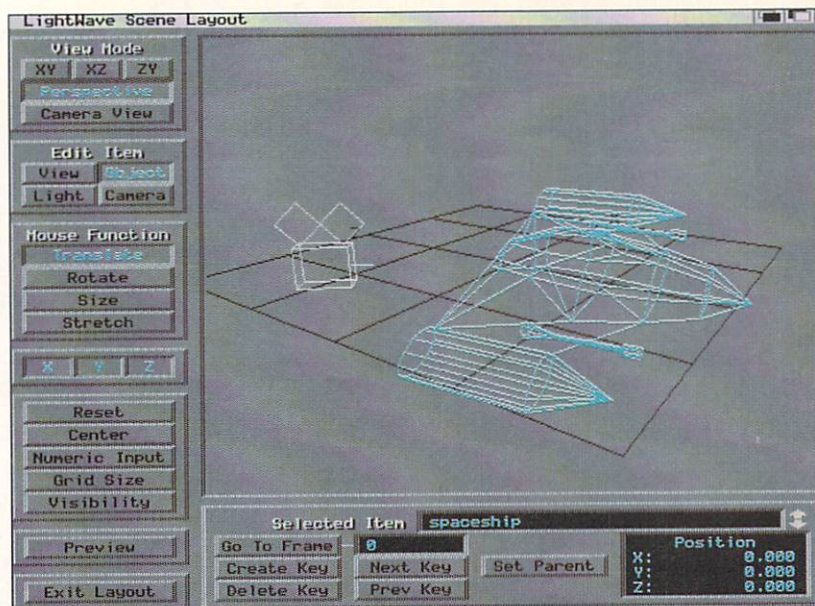


Figure 2. NewTek's *LightWave* software for the *Video Toaster* is the next generation of goodies from the author of *VideoScape*, Allen Hastings.

ond. They first showed this at an Amiga show in Europe a few months ago. Their *Trumpcard Professional* for the Amiga 2000 lists for \$279.95. Phone 714-890-7040 for more information. The demo showed several minutes of continuous sound and digitized animation, all controlled in rock-n-roll fashion with a joystick. You could start it, stop it, fast forward, and play it backwards.

They haven't decided how to sell the software that does this, but imagine the potential... suddenly, you don't need to spend \$5000 building up a stack of intense video equipment to edit and splice your animations. Instead, you'll buy a big, relatively cheap hard disk, and record to disk, then edit and play back in real time to a less-intense video recorder.

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Lightwave,
Pixel 3D, and
Animation:
Journeyman
make a splash
in the animation
world.

This month, *.info*

Technical Support editors

Chris Zamara and Nick

Sullivan introduce you to

the fundamental concepts

of computer program-

ming; Derek Grime shows

you how to push your

Amiga beyond the 4096

color limit; David Martin

presents part one of a

three-part series on

managing your hard disk;

and longtime Commodore

guru Jim Butterfield

explains why every

programming language is

really two different

programming languages.

BEYOND 4096 COLORS

by Derek Grime

Whether you are sending your graphics to video or to print, sooner or later you come face to face with the dreaded bitplane barrier. Some applications today require more colors than the Amiga can provide. This is especially true for professionals working for clients with high standards. If this happens to you, don't despair. You can offer pictures with over 16 million colors and you can do it today. Read on and discover how you can use your Amiga to compete successfully in the high-end graphics marketplace.

Let's first take a look at some history. When the Amiga was released in 1985, its palette of 4096 colors was the largest available on any home computer. Many of the earliest programs used only 32 of these colors at any one time. The hold and modify (HAM) and extra half bright (EHB) graphics modes were largely unexplored. In fact, software that used the Amiga's HAM graphics mode was not available until well into 1986.

As more video and graphic art professionals started using the Amiga in their businesses, the demand grew for even greater color capabilities. Many clients expect

photo-realistic images that can require the 16.7 million colors produced by 24-bitplane graphic images. In the computer graphics world this is known as "true color." A variety of expensive workstations offer this 16-million color capacity, while a stock Amiga can only show 4096 colors in HAM mode, with limitations. Of course, the graphics workstations often sell for over \$50,000.

More Planes

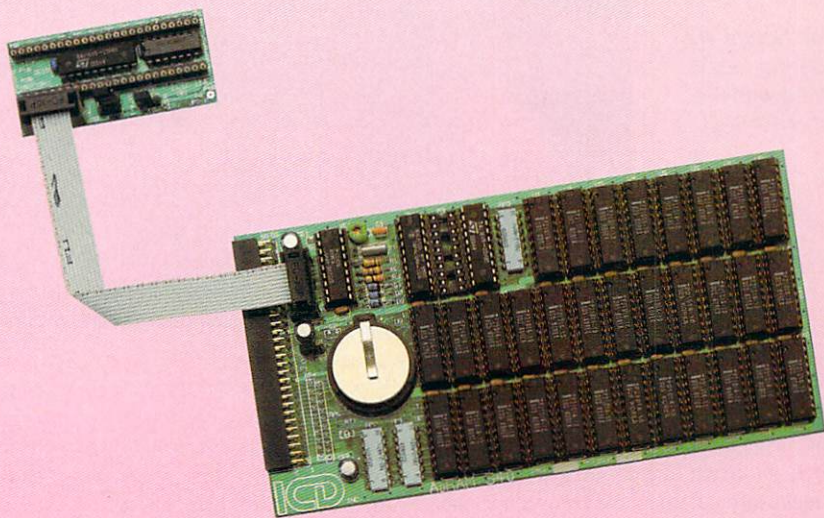
Fortunately, Amiga software and hardware developers have heard the cry for more colors and are now answering the call. Having the Amiga produce more colorful output is really a two-part problem. Software has to support more than 4096 colors, and special hardware is needed to display the images. Here are some of the products that are breaking down the barriers.

NewTek was the first company to realize the possibilities of having more color on the Amiga. *Digi-View* has always supported 21 bitplanes, or two million colors, from the very beginning. The original reason for this relates to oversampling. When you scan in an image with *Digi-View* it actually reads in 128 levels of red, 128 levels of blue and 128



21-bit *Digi-View* image, printed using ASDG's *ReSep*.

Don't settle for less!



AdRAM™ 540 packs the RAM where others fail. Now add up to 6 megabytes of RAM and a clock to your Amiga 500 computer internally! AdRAM 540 plugs into the A501 expansion connector and the 48 pin socket of the Gary IC.

Its clean design does not interfere with the computer's metal RFI shield. This easy no-solder installation provides 4 megabytes of expansion RAM when fully populated. Add the optional AdRAM 560D daughterboard for an additional 2 megabytes.

If your Amiga 500 is equipped with the Super Agnus, a few modifications will allow AdRAM 540 to provide an additional 512K bytes of CHIP RAM. That's a total of 6.5 megabytes for an Amiga 500 without using the external expansion bus! 2.5 megabytes (2.3 without the modification) of this memory is automatically recognized by the operating system. A small program tells the OS where to find the rest, making all the RAM 100% Amiga software compatible.

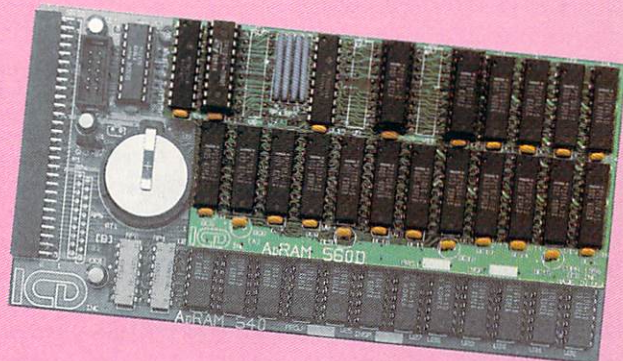
AdRAM 540 with a large RAM array lets you run larger and more sophisticated programs, allows you to take full advantage of your Amiga's multi-tasking operating system, and is very useful for large, very fast, RAM disks.

AdRAM 540's battery backed-up clock always keeps the correct time and date, even when the computer is turned off. The socketed clock battery is easily replaced at the end of its 3-5 year life.

AdRAM 540 uses high quality sockets and is available with or without RAM chips for easy upgrading and trouble-shooting. AdRAM 540 uses CMOS 256K by 4 DRAMs that are at least 120ns or faster. These can be added in groups of four (512K increments).

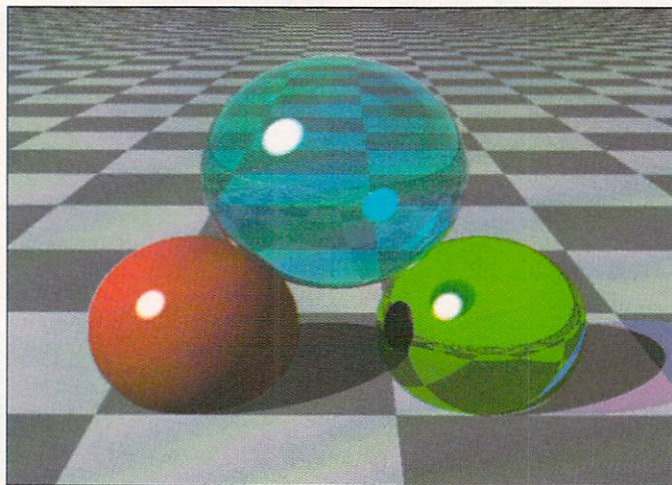
AdRAM 540 fully supports all Kickstart™ versions 1.2 and greater and easily installs into all revisions of the A500. A detailed manual and full diagnostic software are included for trouble-free installation and testing.

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24-bit *Sculpt 4D* rendering, again printed with the aid of *ReSep*.



levels of green. It combines these colors in memory and creates a full two-million color picture. This is the reason that *Digi-View* requires so much memory! The software then seeks through that large color range and finds the best 16 hues of red, green, and blue to display on the Amiga as the final HAM picture. Happily, NewTek left in a way for us to see and use the original "raw" image as well. Next time you run the software, press function key F2 before you save. A hidden menu pops up that allows you to save the raw image in a format that NewTek refers to as "IP." These IP pictures can then be displayed on a frame buffer, used in print, or passed to other computers. Keep in mind that a high-resolution raw file will be too large to fit on one floppy disk. In my own studio I often use *Digi-View* images on an Iris Unix workstation, and they are indistinguishable from pictures that come from scanners costing thousands of dollars.

Digi-View's raw files look great when they are output to video, but print is a whole different ballgame. Even *Digi-View's* highest resolution files fall far short of what is needed to produce a full-color printed page. Programs like Gold Disk's *Professional Page* are well suited to black and white print production but can leave something to be desired when photographic color is required. Fortunately, ASDG has come to the rescue. Their *ReSep* software reads images produced by color scanners and allows these pictures to be placed in *Professional Page* documents. Even better, the software allows the user to see a rough color version of the finished picture. It's like having a thumbnail sketch of the finished picture on-screen, and it's a big help when doing page layout.

When you print out the page to a four-color separation or a color PostScript printer, the software replaces the rough with the original 16-million color scan. This method was used to prepare all the photos in the late, lamented *Amigo Times* magazine. It's also popular with advertising agencies that use the Amiga. *ReSep* is interesting because it heralds a new way of thinking for software developers. It's a hybrid that provides the glue between two existing products and makes them both more useful to the Amiga professional.

Another hybrid program is *PageScript 3D*. *PageScript* is part of the TASS (Thut Application Support System) and works in conjunction with MindWare International's *PageRender 3D*, a three-dimensional modelling and animation program. *PageScript* takes the output from *PageRender* and converts it into a color encapsulated PostScript file that can be sent directly to a laser printer or film recorder. Imagine the possibilities! The resolution is limited only by what the output device can handle, and that means you could have 3D business graphics on slides with resolutions as high as four thousand by four thousand lines.

If you need to create high-resolution, true color, two-dimensional artwork, take a look at *Professional Draw II* by Gold Disk. [See Brad Shenck's *Graphics* column elsewhere in this issue for a full review. -Ed.] One of the hottest features in this upgrade of the original *Professional Draw* is the blend tool. Blend will take two different objects and perform a transition between them. You define the number of interpolations and the starting and finishing color. For example you could easily define a sky that has over

two hundred shades of blue. On the ground could be a grassy field that contained over two hundred levels of green. The possibilities are limitless. Of course you can't display all these colors on your Amiga, but in no time you can see the true color image when it's printed out on a color PostScript printer.

Let's not forget about video. Three dimensional programs have long offered ways to break through the bitplane barrier. Byte-by-Byte's *Sculpt 4D* and Impulse's *Turbo Silver* both offer 24-bitplane ray-traced output. Surprisingly, 24-bitplane files do not take much longer to render than regular HAM mode pictures. If you choose the 24-bitplane option before rendering your images, the software will write a special 16-million color file of your graphic. *Sculpt 4D* actually creates three separate files for each image, one each for red, green, and blue. Special software must be used to combine these three files into one. ASDG's *The Art Department* will merge the files and also do some neat image processing tricks.

Display

Viewing your pictures is another matter. Currently, the best way to see 24 bitplanes on your Amiga is to use a framebuffer. Framebuffers are hardware cards that display pictures in true color. They do not offer access to the Amiga's blitter, so products that are now on sale do not allow page flipping or even fast loading. If you are interested in framebuffers then take a look at Mimetic's aptly titled *FrameBuffer*. Be on the lookout for announced products from Digital Creations and Impulse, and of course NewTek's legendary *Video Toaster*, which is a framebuffer and much more.

HAM is a good compromise and an affordable option, but it's not always what the client is after. If they are willing to pay the price, you can offer them graphics with no limitations on the number of colors or lines of resolution. You can offer photo-realistic graphics on hardware that costs a tenth the price of what your competitors are using. But if you decide to go past the 4096-color barrier, beware! Once you see your artwork with all 16.7 million colors at once you may never be satisfied with HAM again.

Derek Grime is president of *Beyond Graphics*. He can be contacted at: P.O. Box 1249, Station F, Toronto, Ontario Canada, M4Y 2V8.

PROGRAMMING FUNDAMENTALS

by Nick Sullivan and Chris Zamara

This is an article about computer programming for those who have never tried it. It will not teach you how to write even a simple program in any language, but will instead introduce some concepts that are fundamental to most of the languages in common use on the Amiga, such as BASIC, C, ARexx, COMAL and Modula-2.

Are there strong reasons for the average Amiga user to learn how to program? The answer is yes, even if you are primarily interested in using your computer to run programs written by other people.

An excellent reason for learning to program is that it can be great fun. In a way, writing a program is rather like solving a

crossword puzzle: it is a game that can be played for its own sake, without any particular end in view. It is also akin to such other forms of creative expression as writing a poem or painting a picture, and shares with them the attraction that your creation may possibly be appreciated by others as well as yourself.

Another reason to learn programming is, of course, that you can actually achieve something useful, often without a great deal of hard work or technical skill. If you have ever looked in vain for a particular utility that you need - to convert a file from one format to another, to keep track of your bowling league scores, to count the words in a text file, or any of a thousand other simple

tasks - reflect that with a little programming knowledge you could have written the utility yourself, and made it fit your needs *exactly*.

In future issues, articles in this section of *.info* will show you how to approach real programming tasks in languages - like ARexx - that are both approachable and readily available. These articles-to-be will generally have to take your understanding of the information covered in *this* article for granted, so it might be a good idea to keep this issue handy for later review.

What is a computer program?

This is one of those innocent-looking little questions that can easily provoke an unwary writer into a vain effort to provide a comprehensive reply. Here we'll oversimplify, and just say that a program is a document - a text file - containing an ordered sequence of instructions in some computer language.

This elementary definition works better for some languages than others. An AmigaDOS or ARexx script is literally a simple text file: you can use the *Type* command to

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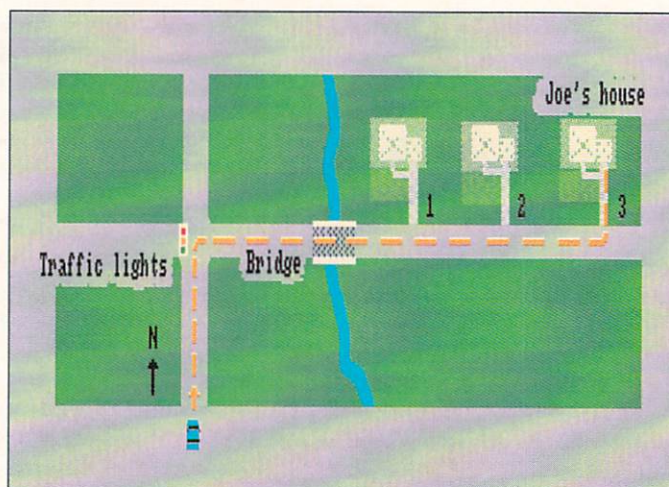
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A series of road instructions to get to Joe's house is like a simple computer program.



display it in your CLI window just as you could with any other ASCII document. AmigaBASIC and COMAL programs are a little different, in that the program text is normally only readable in the specialized editors provided with the language. Compiled languages like C and Modula-2 are different again; in these the program is written as one or more ordinary text files (*source files*), but must be processed by other software to create an *executable* program that you can run.

"An ordered sequence of instructions," we said above, but what exactly does this mean? Simply that the programmer must list, in order, the steps by which the program can fulfil its purpose. For example, here is a program, in English, that will tell you how to get to Joe's house:

```
Go north to the light
Turn east
Drive till you come to a bridge
Continue to the third driveway
    on the left
Turn left and go up the driveway
    to Joe's house
```

Except that English is very much more complex than any computer language ever devised, and that the problem of going to Joe's house is not one you would normally ask a computer to solve, the instructions listed above give a fair idea of what a simple computer program is like. To execute the program, one instruction at a time is acted upon, starting at the beginning and continuing in order until there are no more instructions left.

Learning to write computer programs, then, is basically a twofold problem. One part is to master the grammatical details of the computer language of your choice. This

turns out not to be as hard as it might look. The average programmer knows at least a few languages, and - since the differences between languages are largely a matter of detail - can easily learn a new one if he has to. The other part of writing a program is figuring out the steps needed to solve the task at hand. The main requirement here is that the task be well understood; in that case, working out the steps needn't be more difficult than describing how to get to Joe's.

The Anatomy of Instructions

Many instructions in computer languages are formed rather like simple instructions in English. The pattern is given by sentences like "Wait five minutes," "Open the kitchen door," "Calculate pi," and "Stop!". It begins with a verb - a command like "Wait," "Open," or "Calculate", and also often includes a phrase specifying the thing that the verb is to act upon.

Just as it is easy to spot the verb in the English instructions above, you won't have any trouble finding the *command* in these program instructions:

```
WAIT 5
OPEN 2,"df0:Letter.txt",read
PRINT 2.14159 + 1
STOP
```

The other part of these simple instructions provides the matter on which the commands are to work. You may not know without consulting a manual exactly what the instruction "WAIT 5" will do (indeed, it may do different things in different languages), but you may reasonably guess that it will cause the program to pause, and that the length of the pause will be determined by the number that is given, here "5."

The OPEN instruction above is from the COMAL language. As you may have deduced, it opens the file called "df0:Letter.txt" in preparation for reading the data contained there. This particular OPEN command needs three items of information; the programmer learns from the COMAL language documentation what information is expected, and that the three items must be separated by commas.

Some languages contain a PRINT command that displays (usually on the screen, *not* a printer) some given information. Typically, the PRINT instruction above would cause this display:

3.14159

rather than this:

2.14159 + 1

In general, the "phrase" part of an instruction is constructed in accordance with specific rules (which vary from language to language) from elements like:

- numbers
- short pieces of text, usually in quotation marks
- keywords, which are unquoted (like "read" in the OPEN instruction above)
- special symbols, like the comma, the semicolon, and arithmetic operators

Keywords and symbols are essentially equivalent: it is part of the style of some languages to use one more than the other. BASIC and COMAL, for example, both use the keyword "AND" in contexts where C syntax requires the symbol "&&" and ARexx uses "&". All these mean roughly the same thing.

Values and Variables

The information that a computer program manipulates can be seen in a number of different ways. It is often said, for instance, that computers regard all information as patterns of ones and zeroes, represented physically as the presence or absence of an electrical impulse, or the opening or closing of a switch. This is an accurate statement, but there are other viewpoints, equally valid, and more useful for humans.

The computer's hardware is organized in such a way that it is convenient to deal with those patterns of ones and zeroes in groups of eight, called bytes, each one of which can have 256 different states. At this level, you might say that computers regard all information as groups of bytes, and this too would be correct. The interpretation of a particular byte depends on the needs of the moment. It

may be useful to use a byte to represent one of the integers between 0 and 255, or any one of 256 pictorial symbols, or 256 text characters, or almost anything else.

One of the purposes of computer languages, though, is to let us look at information on our own terms, without having to worry about the computer's hardware. Therefore most languages let us deal with integer numbers over ranges much greater than 0 to 255, with real numbers over a range much greater still, and with chunks of text, which are called *strings*. How these values are represented within the computer is rarely of interest: we let the language worry about that.

Very often, we will want some operation in a computer program to work for *any* value of a certain type, not just for some particular value that we have in mind. It is easy to write a program to calculate the square of a given number. In BASIC we might say: PRINT 5 * 5 (The asterisk in this instruction represents the arithmetic multiplication operator; the same symbol is

used for this purpose in many languages.)

This program would be much more generally useful, though, if it could calculate the square of *any* number, not just the square of five. This is just as easy: PRINT N * N If you have even the faintest acquaintance with algebra, you will recognize N in this instruction as a *variable*; that is, a name with which a value can be associated. Continuing in BASIC, we perform the association of a variable and its value with an *assignment statement*: N = 5 After giving this instruction, we can now use N just about anywhere we could have used the *literal* number 5, as we have already done in the PRINT instruction above. Moreover, we could also say: N = 6; PRINT N * N and perform a new calculation entirely. Using input facilities that vary from language to language, we could create a program that would allow the user assign a value to N via the keyboard, then print back its square. Even this simple use of variables dramatically increases the power available to us in programming.

Variables are not restricted to storing numbers; most languages support *string* variables, which can be used to store text (strings of characters). Just as various mathematical calculations can be performed on numerical variables, different operations can be performed on strings, like comparing two strings, joining strings together, and looking at groups of characters within a string. Numerical and string variables aren't the only data types available to you in most languages, but they are key ingredients in basic program building.

What Next?

You've got some basic ideas down, but if you're not an expert programmer yet, don't fret: wait till next month, when we start putting some of these concepts to work in a little AREXX programming. You'll also learn a few more vital concepts, like decision making and loops, before you're ready to embark on some real programming projects.

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DUAL LANGUAGES

by Jim Butterfield

The English language is said to be a concatenation of two separate language roots, Latin and Teutonic, and for this reason it has about twice the vocabulary of other European languages. We have: fatherly vs. paternal, swine vs. pork, friendly vs. amiable. In the same way, I claim that virtually every computer language is two languages rolled into one; and this is most visible on the Amiga.

I call these two 'dialects' *generic* and *machine-specific*. Generic programs are portable across a wide range of machines, but tend to be drab, with few special effects. Machine-specific programs are often brilliant and impressive, but need a lot of work to allow porting to another type of computer.

It makes sense, of course. An Amiga program that invokes windows, screens, gadgets, graphics, and blitter and copper routines is likely to be impressive. But such a program won't walk across to another manufacturer's machines (or, for that matter, to a Commodore 64) without a lot of reworking. On the other hand, a program that runs in a plain vanilla console window with conventional input and output will be less spectacular; but it will be a snap to convert to another machine.

This raises a problem for the beginner who may buy a book on a given language - say, C - and then tries to relate it to what is found in references such as the *The AmigaDOS Manual* or the *ROM Kernel Manuals*. The introductory book will be talking about the *generic* language; the manuals will speak of the *machine-specific* language. They are both part of the same computer language, but it's hard for the beginner to put them together.

Amiga Riches

Beginners sometimes ask me, "Is programming the Amiga more difficult than other machines?" My initial answer is: No, not to any great extent. The user will need to learn a few new tricks - such as finding the library routines via 'jump tables' that will not always be at the same place in memory.

And the programmer needs to follow the rules more closely, avoiding spaghetti code; a program 'crash' can stop the whole Amiga system, even though other programs may be trying to run in addition to the bad one. Overall, however, a programmer needs only to learn a few rules of the road; after that, the job of programming follows the same pattern.

After answering the question, I often add, "...but the Amiga is so rich it expects you to do a more ambitious job". The windows, screens, menus, gadgets, colors, sound, animations... these are all waiting for you. Your program can become entertaining, pretty, exciting, noisy, interactive, and can dazzle your friends. And when you exploit these Amiga pyrotechnics, your program becomes machine-specific.

If you pick up a book on generic programming (say, *101 Extremely Dull Programs in C*), you'll be taught how to use the language in a portable way. In C language, you'd print output using the `printf()` function, you'd open files with `fopen()`, and you'd ask for working memory with `malloc()`. In AmigaBasic, you'd print with `PRINT`, open files with `OPEN` and, while you might seldom worry about memory space, you'd likely use `CLEAR` to adjust it. All this is quite portable. It may or may not be efficient, and it certainly won't use too many special features.

In contrast, a machine-specific programmer might use C to print output using the `Write()` call to AmigaDOS, to open files

using `Open()`, and to obtain memory using `AllocMem()`. (Be careful of the upper case letters here; the functions must be spelled exactly.) AmigaBasic could start to invoke the *LIBRARY* features to do similar things. The programs would probably be much shorter and would run faster, but they wouldn't port easily to other machines.

The programmer could go much further, building screens and windows, using Intuition to display text, introducing new fonts and colors. Starting on this type of thing is a bit like opening a bag of potato chips; it's hard to stop until you've done the whole job. Just one more screen... one more gadget... one more sound effect...

Data Streams

There's a 'traditional' type of data processing. It comes from early computers; Figure 1 shows the concept of 'streams'. A program has one or more *input streams*; it passes the data through and delivers it to one or more *output streams*. A typical program might receive two input streams: customer account records, and monthly transactions/payments; and write two output streams: revised customer account records, and bills.

We still use this generic type of program on small computers. It's efficient, it does the job, and we're used to it ("Enter principal amount of mortgage"... "Enter interest rate"... and so on). These programs are not exciting, but they do what we need; more, the program will usually adapt easily to a new brand of computer.

But now, with 'MultiMedia' as our banner, we often want to do much more. Input and output streams become intermingled, and we are invited to change our data 'on the fly': to interact and investigate the information that we see. Figure 2 shows this kind of thing.

Indeed, we're not even limited to single programs when we want to do a certain job. A program can spin off 'child' programs that will run independently within the Amiga; these programs might receive 'messages' from the parent program time telling them what to do ("Print this document"). Going a step further, programs can communicate with other programs, directly or via the language ARexx.

First Steps?

If a single language can be used in such a wide range of ways, where does the

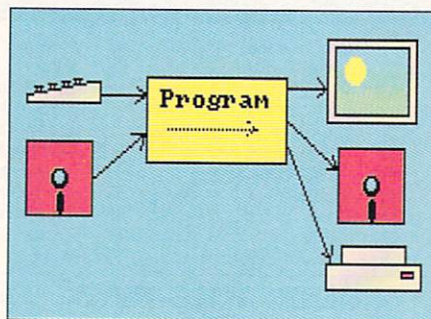


Figure 1.
Generic language lets
you do the basics.

beginner start? How can you get a good footing if different books seem to be dealing with totally unrelated versions of the same language?

I would suggest that the beginner start with a generic introduction to the language. There are more textbooks available in this area. Moreover, a language used in its generic form tends to be 'safer' - the program will be better protected against silly mistakes.

For example, the Amiga library function *AllocMem()* requires you to carefully give back the memory you have obtained, using *FreeMem()*. Generic C *malloc()* will tidy up any memory you might have forgotten. Of course, *AllocMem()* allows you to ask specifically for chip or fast memory; in contrast, the generic function doesn't know about such Amiga fine points.

It seems to me that a beginner needs to gain a little confidence by means of programs that work. The generic languages help. Later, you can begin to probe the machine-specific calls if you need them.

Oddly enough, most books will discuss

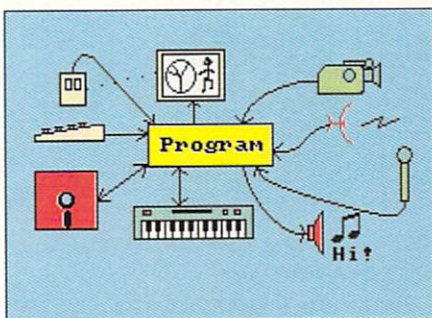


Figure 2.
Machine-specific language lets you do the fun things.

only one kind of coding. Some books that contain a phrase like "... for the Amiga" in their titles never go beyond generic code. Others dive straight into operating system ('library') calls, completely skipping the generic side.

It seems odd that there's such a firm division between the two approaches. They are both there, available to the programmer. For

example, if I'm writing a routine that's snooping through an Amiga directory, using Amiga-specific calls such as *Lock()*, *Examine()*, and *ExNext()*, I'm quite happy to switch sides and use *printf()* for test messages during development. Later, I'll substitute *Output()* and *Write()* for the messages needed by the final version; that will save a lot of memory and disk space. But when I'm writing and testing, my first objective is to get the program talking to me so that I can see what's going on. Compactness and neatness can come later, when the program flow is looking good.

Together

One language: but two quite different styles of putting it to work. That's true of several Amiga languages. Choose *generic* or *machine-specific* according to your need or whim.

If you're like most of us, you'll slowly slide over to the Amiga-specific side. There's a certain pleasure in polishing a program... until it sparkles.

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AMIGADOS HARD DISK MANAGEMENT - PART 1

by David W. Martin

A hard disk can hold more data than a diskette and can transfer data much more quickly, as well. As its name implies, a hard disk isn't flexible like a diskette; data is recorded on one or more rigid metal platters enclosed in a sealed case. The term "fixed disk" is often used to describe a hard disk, since, as this name implies, you don't remove a fixed disk; it's permanently mounted in the drive.

Because a hard disk can hold many more files than a diskette, using it effectively requires more planning and housekeeping. So while a hard disk eliminates the inconvenience of swapping diskettes, and you spend less time waiting for files to load into memory, you have to reinvest some of the time you save in planning how you'll organize your files and in keeping the disk orderly.

Using a hard disk to store files is not unlike keeping paper files. When all you have is a couple of file folders with only a few sheets of paper in each one, the files can be easily managed. But files have a tendency to grow, and eventually you'll find yourself moving from the desktop to a filing cabinet. Managing a filing cabinet is more difficult, because when the drawers start to fill you are often forced to remove

old files for storage, and it can get harder to find the files you need.

The same holds true for a hard disk filled with computer files, especially if you're using several application programs. Files proliferate, and it's all too easy to lose track of the ones you need. But, properly organized and managed, a hard disk lets you work significantly faster with a minimum of bother.

Many utilities are available for managing hard disks. Some are as close as AmigaDOS, while others come from independent hardware and software companies. Because this article is not intended as a buyer's guide, and because disk management needs vary with the ways in which hard disks are used, this series of articles will concentrate on how a hard disk works (Part 1) and on the AmigaDOS commands designed for hard disk management (Parts 2 and 3).

Throughout parts two and three of this series, the emphasis is on the two tasks that are more important than any others in managing your hard disk efficiently: setting up your filing system, and periodically backing up your files - both to protect yourself against loss of data if your hard disk is inadvertently erased or damaged, and to clear out old files you no longer use regularly.

How a Hard Drive Works

Hard disks come in a variety of sizes and shapes. Most common is the internal drive, which is installed inside the cabinet of your computer, usually beneath or beside the floppy disk drive(s). Hard disks are also available as hard disk cards that plug into an expansion slot, external hard drives in a separate case, and other variations such as the Bernoulli Box, which stores data on removable cartridges (these are not actually rigid platters, but Bernoullis store so much data that they can be thought of as hard drives for all practical purposes). All the various hard disks are operated in the same manner; regardless of the type you are using, the same techniques and commands are used for their management.

A hard disk like that shown in Figure 1 contains two or more metal platters that are 3.5 or 5.25 inches in diameter. The platters are stacked on a central axis, or spindle. A separate arm holds a series of read/write heads, one for each surface of each platter. An electric motor turns the spindle, rotating the platters so that they move past the read/write heads. The platters are coated with a magnetic material, similar to the coating used on audio tapes, so that information can be read from or written to the disk. This entire assembly, including the motor and read/write heads, is sealed in an airtight case.

A hard disk has greater storage capacity than a floppy disk because it contains more than one magnetically coated disk, data can be recorded more densely, and the disks spin faster.

The storage capacity of AmigaDOS diskettes is roughly 880K. Typical hard disk drives hold from 10 megabytes to 100 megabytes of data. The most common size in use today on the Amiga is 20 to 40 megabytes. Capacities of other drives can be as high as 200 megabytes or more. As you can see, a hard disk gives you a considerable amount of filing space.

Data on a hard disk is stored in the same manner as a diskette, in narrow concentric circles called tracks. Each track is divided into segments called sectors, and a sector normally holds 512 bytes. Each platter has two sides. The sides, tracks, and sectors are physical portions of the hard disk. Figure 2 shows a simple arrangement of tracks and

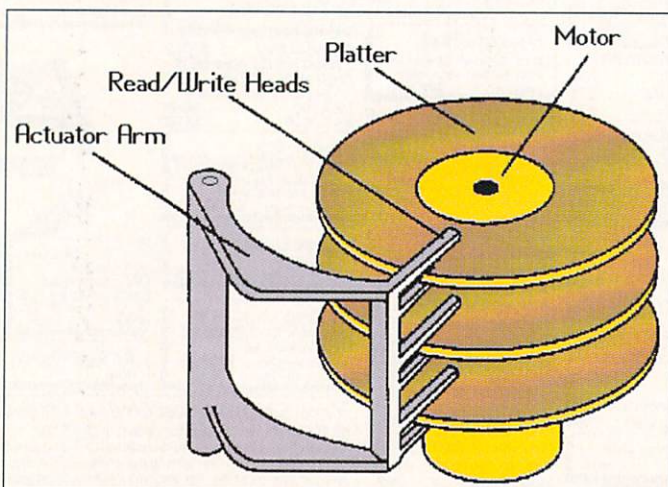


Figure 1.
Simplified internal
drawing of a hard
disk drive.

sectors on a hard disk. The number of tracks and sectors will vary according to the capacity of your hard disk.

Another unit of data storage on a hard disk is the *cylinder*. A cylinder is all the tracks with the same number on each side of each platter. For example, if a hard disk has six platters, then cylinder six consists of the stack formed by the twelve tracks numbered six on the upper and lower surfaces of each of the six platters. A cylinder can be thought of as a track-sized "slice" through all of the platters.

AmigaDOS keeps track of each sector by a unique number assigned to each one. It uses these sector numbers to store files on the disk and keeps track of their location by storing these numbers in a file's directory entry. A special programming utility is required to examine sectors directly by their number, since the standard AmigaDOS Directory command doesn't normally display this information. (If you type the *List* command using the optional "KEYS"

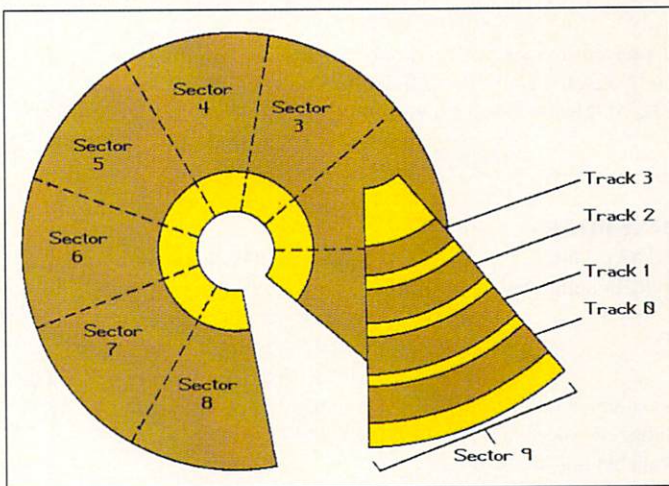


Figure 2.
Simple diagram
of tracks and
sectors on a disk.

keyword, however, the starting sector number will be displayed for each file listed.)

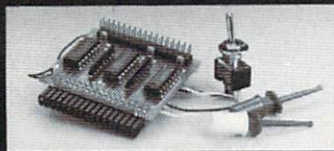
For the most part you don't have to deal with platters, sides, tracks, and sectors; all you should really be concerned with is drive designations, path names, and file names.

Next month we will take a look at how you can better manage your hard disk's data while working with partitions, directories, and files.



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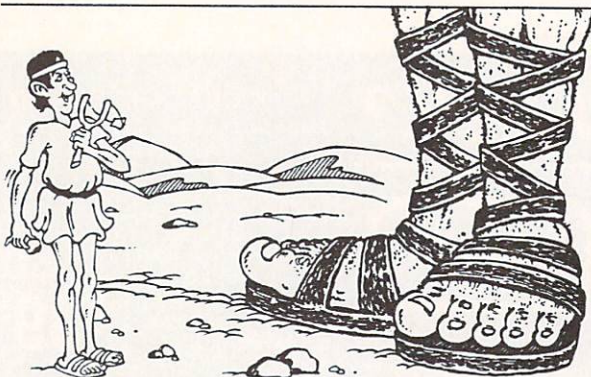
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FD6: GAMES! - This disk is chocked full of games including: Checkers, Clue, Gold - A new slide the pieces puzzle, Jeopard - An enhanced version of Risk, RushHour - Surprisingly addicting, and SpaceWar - Best described as a cross between Combat-Tanks and asteroids.

FD7: PACMAN - This disk contains several pacman type games including: PacMan87, MazMan and Zonix.

FD9: Moria - a very well done port of an UNIX based character adventure game. This has great graphic controls, multiple spells, similar to Larn and Hack. Takes up the whole disk. Play time several weeks!

FD10: HackLite - A dungeon adventure game. Considered a must have classic. This is the second release of this game on the Amiga. Originally a UNIX game. Great Amiga graphic interface. Fills the whole disk. Play time several weeks!

FD12A, FD12B: Star Trek, The Game - This is by far the best Star Trek game ever written for any computer. It features mouse control, good graphics, digitized sound effects and great gameplay. Counts as 2 disks. Req. 1Mb and two drives (or hd).

FD13: Board Games - contains multiplayer Monopoly, Dominoes, Paranoids, and others.

FD14: Dungeon Master Hints and Arcade Games - DM maps, spells, item location, and hints and more, also on this disk, Hball - an arknoid/break out type game, Trix - a Qix type clone.

FD16: Strategy Games - Includes Diplomacy and Empros, both great conquer and rule multiplayer games similar in concept to Simcity and Populus. Also includes blackbox, hearts, and others.

FD17: Educational Games - This disk includes several games for the younger members including geography, math, science, and word games, also includes Wheel of Fortune.

FD20: Tactical Games - MechForce(3.65); A game that simulates combat between two or more giant, robot-like machines. Simple words can't begin to give you the feel of piloting a 30 - 40 foot tall, fire breathing, earth shaking colossus that obeys your every whim. This game is the full featured update to BattleForce(3.0) on FD5.

FD22: Arcade Games - This disk has MoonBase - The best lunar lander game we have seen in a long time, very challenging and addicting. Also BeingGame - a maze type, donkey kong type game.

FD24: Strategy Games and Others - Includes Dickey, a yathzee

type clone, MM a master mind type clone, Flipper an othello type clone, China a great implementation of Shangi, CircuitWars a challenging game based on electronics, and Etrain a computer based model train set construction set for the enthusiast.

FD25: Tactical Games - Empire (133w) Empire is a rich simulation of international politics, economics and war, which is played over a period of a few months by 2 or more people. Players can run their countries from the normal Amiga keyboard, or via a modem at 300 to 2400 baud.

FD26: Arcade Games - Marble, slide, truly this is a commercial quality game. Similar to a Lucas game named PipeDreams, excellent playability and entertainment. Mutants, a small version of the arcade game of the same name, also SuperBreakout a pong/arknoids type game.

FD27: Arcade Games - This disk is loaded with some great games. Includes: Raceorama a great racing car game with ten different courses, MiniBast a helicopter gunship type clone, Shark in the same class as frogger.

FD28: Games - This disk contains several great games including, DripGame - Sort of belongs to the PacMan type clone category but not exactly. This is truly a new and great original gaming idea. Very addicting, excellent playability, highly recommended. Pyramid - a Q-Bert type clone. Also, KingOil - a challenging board game where you are the leader of a wild cat oil team. Object - try and become another Exxon.

FD29: Shoot'em up's - WWII - your the pilot of a world war II plane flying through enemy territory, you've just been spotted, good luck on your mission, Spikier - try and penetrate enemy lines with this game, and Retaliator - another great game.

FD31: Games - Air Traffic Control - a good ATC simulation game, Black Jack Lab - a full featured set of card games, ChessTel - play chess with your friend in distant and remote places with this game and a modem, labyrinth - a well done text adventure game (like an infomac game), and MouseTrap - a 3d maze game.

WB4: Telecommunication - This disk contains several excellent pd communication programs designed to get you on line quickly and easily. Access (1.42) - A very nice ANSI term program based on Comm v1.34, but with the addition of transfer protocols, Comm (1.34) - a fast version of one of the best public domain communications programs ever made on the Amiga, Handshake (2.12a) - Handshake is a Full featured VT52/100/102/220 terminal emulator, and JRCComm (0.94a) another great comm program.

WB5 - Fonts #1 - Several fonts (35) for the Amiga, also included are five PageStream fonts, and ShowFont - a font display program.

WB7: Clip Art - This disk is loaded with black and white clip art. Art includes, trees, watches, tools, US and State maps, and more.

WB10: Virus Killers - The latest and best VirusX(4.0), Kv(2.1), and ZeroVirus(1.3).

WB11: Business - Clerk(4.0), finally a full featured business accounting PD program for the small to medium company. Includes receivables, payables, end of month and much much more.

WB12: Disk Utilities - This great disk is loaded with wonderful utilities for everything including making disk labels, disk cataloging, disk optimizing, disk and file recovery archive and organizing, and all sorts of file manipulation. A real must have!

WB13: Printer Drivers and Generator - over 70 different drivers, and if these don't do it, PrtDrvGen an easy to use program to make your own.

WB15: Business - This disk contains a spreadsheet, a database, a project time management program and financial analysis (stocks).

WB16: Business - This disk contains an inventory manager, a loan analysis program, a great calendar/scheduler, a rolodex program, and pennywise a good "Cash Book" accounting for home or office.

WB18: WordText Processors - This disk contains the best editors that we could find. Includes, WordWright(v6.2) a full featured word processor with mail merge and outlining capacity, Dme(v1.35) a great programmers editor with strong macro features, and Trex(v2.8) an enhanced Emacs type editor.

WB20: General Interest - On this disk is, DiskSalv V1.42 a disk recovery program for all Amiga file system, FixDisk V1.0 another file recovery program with features DiskSalv doesn't have, 3DLook a program that gives a 3D appearance to your WorkBench, Clean V1.01 a program to de-fragment memory, Tracer - trace any part of that image.

WB22: Fonts #3 - Several more great fonts. These, like the other font disks work great with DPaint and WYSIWYG word processors.

WB23: Graphics and Plotting - Plot (20b) a three dimensional mathematical function plotter. Can plot any user defined function, all aspects controllable, BezSurf2 is a program for producing bezier surfaces of revolution. It produces awesome pictures of objects one could turn on a lathe. Can also map if image files onto any

surface that it can draw. Now compatible with most 3D packages and VScreen makes a virtual screen anywhere. For you DTP people this is an absolute must have. It allows full page editing without redraws!

WB25: Educational - On this disk are two programs that can generate maps of differing types, World Data Base uses the CIA's data base to generate detailed maps of any enter user global coordinate. Also Paradox a great demonstration of Albert Einstein General Theory of Relativity.

WB26: Disk Utilities #2 - MrBackup, KwickBackup - two well done utilities to help with harddisk and floppy disk backups, FileMast - a binary file editor much like NewZap, LablePrinter - a brand new Disk label printer with some of the most powerful features. We have seen to date, each designed to give maximum control over what shows up on your labels.

WB27: Nagel - This disk contains 26 Patrick Nagel pictures of beautiful women.

WB28: Scientific - On this disk is MATLAB or MATRIX LABoratory. This provides comprehensive vector and tensor operations.

WB29: Graphics and Sound - This disk has several different Mandelbrot type programs for generating stunning graphics. Includes, MandelMountains - a realistic terrain generator, Fracgen - generated recursive fractals from user input, Mandelbrot and Tmandel - two fast mandelbrot generators, also Mostra - the best IFF display program to date, will display ALL IFF's including Dynamic HAM, and Sound - a great IFF sound player, will play anything. Try this disk, you'll love it!

WB33: Circuit Board Design - several terrific routines for the electronic enthusiast, including PCBtool - a circuit board design tool, LogicLab - circuit logic tester, and Mcad (1.26) a well done new release of this PD cad program, now comes with predrawn common circuit components for insertion into schematics.

WB36: Graphics - On this disk are several programs to create stunning graphical images including, MPath - creates swirling galaxy images, Roses - produce an unlimited number of variations of images that a symmetrically similar to a rose, SimGen - display those spectacular images as part of your workbench screen, and RayShade - a very good raytracing program, create your own beautiful 3d graphic models.

DD45: AREXX PROGRAMS - This disk contains several useful arexx programs and examples. PopCL4 - The latest of a must have utility.

DD47: Pascal - This disk contains everything needed to program in pascal. Includes, A68k (1.2) 68000 assembler, Blink linking software and PCQ (1.0) a modest Pascal sub-set compiler.

DD49: C Compiler - contains zc(1.01) fully K&R, zcc(1.0) front end, A68k (1.2) assembler, Blink linker.

DD50: AREXX #2 - a must have set of tutorials on AREXX and several useful examples and utilities for AREXX development.

DD51: Circuit Analysis - Aspic (2.3) A full featured program for electric circuit analysis.

DD52: Scientific - This disk contains several great programs and C source routines for the scientist and science student. Includes Elements - an incredibly well done periodic table program with source, Scientific plotting - over 600k of Lattice C source FFT - fft C source.

DD54: Compression - This disk is loaded with ALL of the best file compression programs and aids for the Amiga. Many of the programs can be used by the new user. Includes Arc(2.3), LhArc(1.0), LhWarp(1.03), PkArc(1.0), PowerPacker(2.3a) a must have by all, Zip(1.0), Warp(2.04), and Zoo(2.0). Also IFFcrunch an excellent compression for IFF files.

DD55: ARP - On this disk you will find the complete ArpRel3.0 release including the full user docs, the full Developers guide, and Conman (1.4). ARP is the official AmigaDOS Resource Project (ARP) release 1.3. ARP makes many improvements to AmigaDOS and makes your system easier to use from the CLI.

DD57: Advanced Utilities - Msh - like Cross-odos, copies files to and from MS-DOS, Pal-NTSC - convert any pal program to NTSC and visa versa, IconJ - a new improved IconX clone, KillAgnius - disables 512k of chip ram. Also several utilities that improve your startup-sequence, plus 25 more programs.

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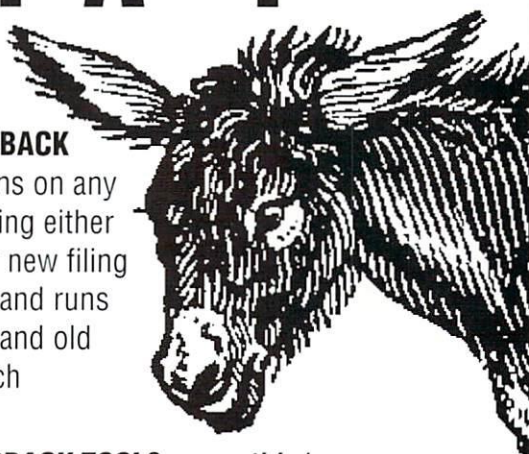
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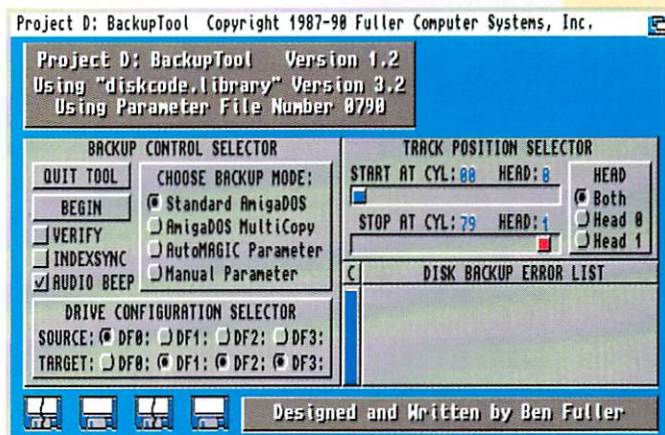
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A Graphic Demonstration



Deluxe Paint III
has 32 colors* and costs \$149.95.



Digi-Paint 3
gives you 4096 colors and costs \$99.95.

Get the picture?

Which one of the artistic tools pictured here would a child choose? The answer is obvious, the more colors the better. The choice is just as easy when it comes to Amiga paint programs. Digi-Paint 3 works in the Amiga's powerful Hold-And-Modify (HAM) mode which allows you to paint using all 4096 colors simultaneously. By comparison, Deluxe Paint III (by Electronic Arts) operates in less sophisticated modes, restricting you to a maximum of only 32 colors*. What does this mean to your Amiga art? Simply put, the program with more colors makes the better pictures. But that's just one of the reasons Digi-Paint 3 is the ultimate paint program.

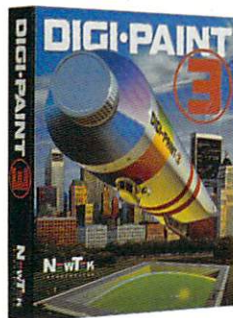
Other advanced features found in Digi-Paint 3:

- 14 drawing modes including colorizing, range painting, and texture mapping
- Powerful tools including: magnify, rotate, cut-and-paste, and variable transparency

- Anti-aliased fonts give sharp edges and a crisp television look
- Paint on canvases up to 1024 x 1024 with auto-scrolling
- Supports *all* Amiga display modes and resolutions
- Compatible with the Amiga 3000 and WorkBench 2.0

AmigaWorld magazine recently compared the leading paint programs in a head-to-head showdown. A clear winner emerged: **"Digi-Paint 3 is the one to beat for speed, versatility and professional applications."** After six pages of detailed evaluations they concluded with, **"If you are really serious about owning only one paint program, we would have to recommend Digi-Paint 3."**

Digi-Paint 3 is available now
at your local Amiga dealer or call
1-800-843-8934 or 913-354-1146.



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*In some modes an additional 32 half-intensity shades are available.